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Monitoring Report #6

WATER QUALITY OF INTERSTATE STREAMS IN THE SUSQUEHANNA RIVER BASIN

Fiscal Year 1992
July 1, 1991-June 30, 1992

SUSQUEHANNA RIVER BASIN COMMISSION

Publication No. 151

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Fiscal Year 1992
July 1, 1991-June 30, 1992

BY

Scott W. Bollinger
Environmental Specialist

Printed on recycled paper

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Water quality of interstate
streams in the Susquehanna
Monitoring report #6

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The Susquehanna River Basin Commission was created as an independent agency by a federal-interstate compact* among the states of Maryland, New York, Commonwealth of Pennsylvania, and the federal government. In creating the Commission, the Congress and state legislatures formally recognized the water resources of the Susquehanna River Basin as a regional asset vested with local, state, and national interests for which all the parties share responsibility. As the single federal-interstate water resources agency with basinwide authority, the Commission's goal is to effect coordinated planning, conservation, management, utilization, development and control of basin water resources among the government and private sectors.

*Statutory *Citations: Federal - Pub. L. 91-575, 84 Stat. 1509 (December 1970); Maryland - Natural Resources Sec. 8-301 (Michie 1974); New York - ECL Sec. 21-1301 (McKinney 1973); and Pennsylvania - 32 P.S. 820.1 (Supp. 1976).*

Publication No. 151
July 1993

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CONTENTS

	Page
INTRODUCTION	1
BASIN GEOGRAPHY	1
METHODS	1
Sampling Frequency	1
Stream Discharge	6
Water Samples	6
Field Chemistry	15
Macroinvertebrate Sampling	15
Data Synthesis	15
RESULTS	16
New York-Pennsylvania Border Streams	16
Pennsylvania-Maryland Border Streams	16
REFERENCES	49

APPENDIX

A. Water Quality Data for Interstate Streams Crossing the New York-Pennsylvania and Pennsylvania-Maryland Borders	51
B. Macroinvertebrate Data for Interstate Streams Crossing the New York-Pennsylvania and Pennsylvania-Maryland Borders	57

ILLUSTRATIONS

1. Map Showing Susquehanna River Basin	2
2. Interstate Streams Along the New York-Pennsylvania Border Between Cascade Creek and Apalachin Creek	10
3. Interstate Streams Along the New York-Pennsylvania Border Between Seeley Creek and Wappasening Creek	11
4. Interstate Streams Along the New York-Pennsylvania Border Between North Fork Cowanesque River and Tioga River	12
5. Interstate Streams Along the Pennsylvania-Maryland Border	13
6. Parameters Exceeding Water Quality Standards	17

TABLES

		Page
1.	Interstate Streams in the Susquehanna River Basin	3
2.	Stream Stations Sampled Along the New York-Pennsylvania Border and Sampling Rationale	7
3.	Stream Stations Sampled Along the Pennsylvania-Maryland Border and Sampling Rationale	9
4.	Monitored Parameters	14
5.	Water Quality Standards	17
6.	Water Quality Summary Susquehanna River at Windsor, N.Y.	20
7.	Water Quality Summary Trowbridge Creek at Great Bend, Pa.	21
8.	Water Quality Summary Snake Creek at Brookdale, Pa.	22
9.	Water Quality Summary Little Snake Creek at Brackney, Pa.	23
10.	Water Quality Summary Susquehanna River at Kirkwood, N.Y.	24
11.	Water Quality Summary Choconut Creek at Vestal Center, N.Y. ..	25
12.	Water Quality Summary Apalachin Creek at Little Meadows, Pa. .	26
13.	Water Quality Summary Wappasening Creek at Nichols, N.Y.	27
14.	Water Quality Summary Cayuta Creek at Waverly, N.Y.	28
15.	Water Quality Summary North Fork Cowanesque River at North Fork, Pa.	29
16.	Water Quality Summary Troups Creek at Austinburg, Pa.	30
17.	Water Quality Summary Cowanesque River at Lawrenceville, Pa. .	31
18.	Water Quality Summary Tioga River at Lindley, N.Y.	32
19.	Water Quality Summary Seeley Creek at Seeley Creek, N.Y.	33
20.	Water Quality Summary South Creek at Fassett, Pa.	34
21.	Water Quality Summary Bentley Creek at Wellsburg, N.Y.	35
22.	Water Quality Summary Chemung River at Chemung, N.Y.	36
23.	Water Quality Summary Susquehanna River at Sayre, Pa.	37
24.	Water Quality Summary South Branch Conewago Creek at Bandanna, Pa.	38

TABLES
(Continued)

		Page
25.	Water Quality Summary Long Arm Creek at Bandanna, Pa.	39
26.	Water Quality Summary Susquehanna River at Marietta, Pa.	40
27.	Water Quality Summary Scott Creek at Delta, Pa.	41
28.	Water Quality Summary Conowingo Creek at Pleasant Grove, Pa. .	42
29.	Water Quality Summary Octoraro Creek at Rising Sun, Md.	43
30.	Water Quality Summary Ebaughs Creek at Stewartstown, Pa.	44
31.	Water Quality Summary Deer Creek at Gorsuch Mills, Md.	45
32.	Water Quality Summary Big Branch Deer Creek at Fawn Grove, Pa.	46
33.	Water Quality Summary Falling Branch Deer Creek at Fawn Grove, Pa.	47
34.	Water Quality Summary Susquehanna River at Conowingo, Md.	48
A- 1.	Water Quality Data for Interstate Streams Crossing the New York-Pennsylvania Border	53
A- 2.	Water Quality Data for Interstate Streams Crossing the Pennsylvania-Maryland Border	55
B- 1.	Macroinvertebrate Data for Susquehanna River at Windsor, N.Y.	59
B- 2.	Macroinvertebrate Data for Trowbridge Creek at Great Bend, Pa., 1988-91	61
B- 3.	Macroinvertebrate Data for Snake Creek at Brookdale, Pa., 1986-91	62
B- 4.	Macroinvertebrate Data for Little Snake Creek at Brackney, Pa., 1988-91	64
B- 5.	Macroinvertebrate Data for Susquehanna River at Kirkwood, N.Y.	65
B- 6.	Macroinvertebrate Data for Choconut Creek at Vestal Center, N.Y., 1988-91	67
B- 7.	Macroinvertebrate Data for Apalachin Creek at Little Meadows, Pa., 1988-91	68
B- 8.	Macroinvertebrate Data for Wappasening Creek at Nichols, N.Y., 1988-91	69

TABLES
(Continued)

		Page
B- 9.	Macroinvertebrate Data for Cayuta Creek at Waverly, N.Y.	70
B-10.	Macroinvertebrate Data for North Fork Cowanesque River at North Fork, Pa., 1988-91	71
B-11.	Macroinvertebrate Data for Troups Creek at Austinburg, Pa. ...	72
B-12.	Macroinvertebrate Data for Cowanesque River at Lawrenceville, Pa.	73
B-13.	Macroinvertebrate Data for Tioga River at Lindley, N.Y.	74
B-14.	Macroinvertebrate Data for Seeley Creek at Seeley Creek, N.Y., 1986-91	75
B-15.	Macroinvertebrate Data for South Creek at Fassett, Pa., 1988-91	77
B-16.	Macroinvertebrate Data for Bentley Creek at Wellsburg, N.Y., 1986-91	78
B-17.	Macroinvertebrate Data for Chemung River at Chemung, N.Y.	79
B-18.	Macroinvertebrate Data for Susquehanna River at Sayre, Pa. ...	81
B-19.	Macroinvertebrate Data for South Branch Conewago Creek at Bandanna, Pa., 1988-91	82
B-20.	Macroinvertebrate Data for Long Arm Creek at Bandanna, Pa., 1988-91	83
B-21.	Macroinvertebrate Data for Susquehanna River at Marietta, Pa.	84
B-22.	Macroinvertebrate Data for Scott Creek at Delta, Pa.	85
B-23.	Macroinvertebrate Data for Conowingo Creek at Pleasant Grove, Pa.	86
B-24.	Macroinvertebrate Data for Octoraro Creek at Rising Sun, Md. .	87
B-25.	Macroinvertebrate Data for Ebaughs Creek at Stewartstown, Pa.	88
B-26.	Macroinvertebrate Data for Deer Creek at Gorsuch Mills, Md. ..	89
B-27.	Macroinvertebrate Data for Big Branch Deer Creek at Fawn Grove, Pa., 1988-91	91
B-28.	Macroinvertebrate Data for Falling Branch Deer Creek at Fawn Grove, Pa., 1988-91	92

ABSTRACT

Water samples were collected from 29 stations on interstate streams between July 1, 1991, and June 30, 1992. Samples were collected every other month from streams judged to have a high potential for degradation. Streams judged to have a moderate potential for degradation were sampled once during July and August 1991. Benthic macroinvertebrates were sampled at each station in July and August 1991. The data collected are used: (1) to assess compliance with water quality standards; (2) to assess impacts on water quality; (3) to characterize ambient and seasonal stream quality; and (4) to assess future trends.

Scott Creek is the only interstate stream having poor water quality. Untreated sewage discharges from Cardiff, Md., impairs water quality in this stream. Cayuta Creek and the Chemung River have elevated chemical concentrations due to wastewater discharges. Acid mine drainage to the Tioga River contributes to elevated metals concentrations. Conowingo Creek has elevated nutrient concentrations due to agricultural runoff in the watershed. Most interstate streams have good water quality. Only 19 of the 2,667 analyses exceeded water quality standards. Iron most commonly exceeded standards.

INTRODUCTION

The Susquehanna River Basin Commission (SRBC) reviews projects and policies for potential impacts on interstate water resources in the Susquehanna River Basin. Current water quality data are needed to conduct these reviews. However, monitoring programs conducted by New York, Pennsylvania, and Maryland do not cover all of the interstate streams and do not produce comparable data. Thus, SRBC established a monitoring program to collect data needed to assess potential impacts on the water quality of interstate streams. This ongoing program is partially funded through a grant from the U.S. Environmental Protection Agency.

The monitoring program includes periodic collection of water and biological samples from interstate streams. Chemical data are used: (1) to assess compliance with state water quality standards; (2) to characterize stream quality and seasonal variations; and (3) to build a database for the future assessment of water quality trends. Biological conditions are monitored by assessing benthic macroinvertebrate populations. Macroinvertebrate populations provide an indication of the biological health of a stream and serve as indicators of water quality.

Monitoring began in April 1986. Results were originally reported for Water Years (WY) that run from October to September (McMorran, 1988; McMorran and Bollinger, 1989; McMorran and Bollinger, 1990; Bollinger, 1991) This report is being presented for the SRBC fiscal-year that covers the period from July 1, 1991, to June 30, 1992. In the future, monitoring data will be reported on a fiscal-year basis.

BASIN GEOGRAPHY

The Susquehanna River Basin is the largest river basin on the Atlantic Coast of the United States; draining 27,580 square miles (figure 1). The Susquehanna River originates at the outlet of Otsego Lake, Cooperstown, N.Y., and flows 450 miles through New York, Pennsylvania, and Maryland to the Chesapeake Bay at Havre de Grace, Maryland. Eighty-three streams cross state lines in the basin (table 1). Some streams traverse the state lines at several places, contributing to a total of 91 crossings. At 45 of these locations, streams flow from New York into Pennsylvania. Twenty-two reaches cross from Pennsylvania into New York, 15 from Pennsylvania into Maryland, and nine from Maryland into Pennsylvania. Many streams are small; 32 are unnamed.

METHODS

Sampling Frequency

In Water Year 1989, the interstate streams were divided into the following three groups according to the degree of water-quality impairment and potential for degradation.

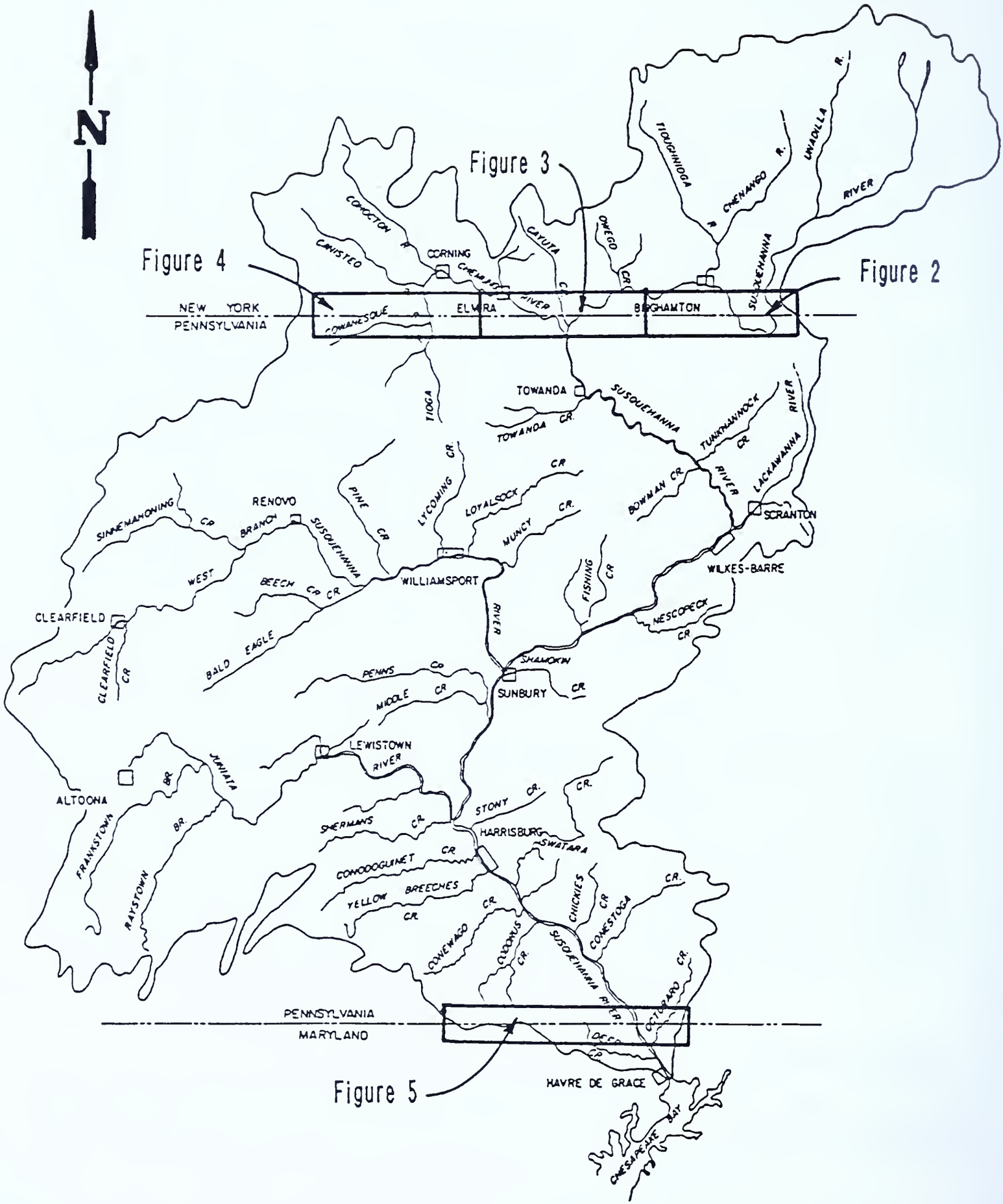


FIGURE 1. Map Showing Susquehanna River Basin

TABLE 1. Interstate Streams in the Susquehanna River Basin

Streams Between New York and Pennsylvania	Monitoring Group	Flow Direction (from -> to)
Apalachin Creek	2	Pa.->N.Y.
Babcock Run	3	N.Y.->Pa.
Bentley Creek	2	Pa.->N.Y.
Bill Hess Creek	3	N.Y.->Pa.
Bird Creek	3	Pa.->N.Y.
Biscuit Hollow	3	N.Y.->Pa.
Briggs Hollow Run	3	N.Y.->Pa.
Bulkley Brook	3	N.Y.->Pa.
Camp Brook	3	N.Y.->Pa.
Cascade Creek	2	N.Y.->Pa.
Cayuta Creek	1	N.Y.->Pa.
Chemung River	1	N.Y.->Pa.->N.Y.->Pa.
Choconut Creek	2	Pa.->N.Y.
Cook Hollow	3	N.Y.->Pa.
Cowanesque River	1	Pa.->N.Y.
Deep Hollow Brook	3	N.Y.->Pa.
Denton Creek	3	N.Y.->Pa.
Dry Brook	3	N.Y.->Pa.
Holden Creek	2	N.Y.->Pa.
Little Snake Creek	2	Pa.->N.Y.
Little Wappasening Creek	3	Pa.->N.Y.
North Fork Cowanesque River	2	N.Y.->Pa.
Parks Creek	3	Pa.->N.Y.
Prince Hollow Run	3	N.Y.->Pa.

TABLE 1. Interstate Streams in the Susquehanna River Basin (Continued)

Streams Between New York and Pennsylvania	Monitoring Group	Flow Direction (from -> to)
Red House/Beagle Hollow	3	N.Y.->Pa.
Russell Run	3	N.Y.->Pa.
Sackett Creek	3	Pa.->N.Y.
Seeley Creek	2	Pa.->N.Y.
South Creek	2	Pa.->N.Y.
Snake Creek	2	Pa.->N.Y.
Strait Creek	3	N.Y.->Pa.
Susquehanna River	1	N.Y.->Pa.->N.Y.->Pa.
Tioga River	1	Pa.->N.Y.
Troups Creek	1	N.Y.->Pa.
Trowbridge Creek	2	N.Y.->Pa.
Wappasening Creek	2	Pa.->N.Y.
White Branch	3	N.Y.->Pa.
White Hollow	3	Pa.->N.Y.
17 Unnamed tributaries	3	N.Y.->Pa.
2 Unnamed tributaries	3	Pa.->N.Y.
2 Unnamed tributaries	3	Pa.->N.Y.->Pa.
1 Unnamed tributary	3	N.Y.->Pa.->N.Y.

TABLE 1. Interstate Streams in the Susquehanna River Basin (Continued)

Streams Between Pennsylvania and Maryland	Monitoring Group	Flow Direction (from -> to)
Big Branch Deer Creek	2	Pa.->Md.
Conowingo Creek	1	Pa.->Md.
Deer Creek	1	Pa.->Md.
Ebaughs Creek	1	Pa.->Md.
Falling Branch Deer Creek	2	Pa.->Md.
Island Branch	3	Pa.->Md.
Long Arm Creek	2	Md.->Pa.
Octoraro Creek	1	Pa.->Md.
Scott Creek	1	Md.->Pa.
South Branch Conewago Creek	2	Md.->Pa.
Susquehanna River	1	Pa.->Md.
6 Unnamed tributaries	3	Md.->Pa.
7 Unnamed tributaries	3	Pa.->Md.

Streams with impaired water quality or that were judged to have a high potential for degradation were assigned to Group 1. Water samples were collected from these stations every other month with the exception of the months of January and February. Sampling was alternated so that streams along the New York-Pennsylvania border were sampled one month (July, September, November, March, and May) and streams along the Pennsylvania-Maryland border were collected the following month (August, October, December, April, and June). Benthic macroinvertebrates were collected at Group 1 stations during July and August 1991.

Streams judged to have a moderate potential for impacts were assigned to Group 2. Water quality and macroinvertebrate samples were obtained from Group 2 stations once a year between July 22 and August 5, 1991.

Streams that were judged to have a low potential for impacts were assigned to Group 3. These stations were not sampled, but were visually inspected for signs of degradation once a year.

Stream stations sampled during the fiscal year 1992 are listed in tables 2 and 3 and shown on figures 2 through 5.

Stream Discharge

Stream discharge was measured at all stations unless high stream flows made access impossible. Several stations are located near United States Geological Survey (USGS) stream gages. These stations include: the Susquehanna River at Windsor, N.Y., Kirkwood, N.Y., Sayre, Pa., Marietta, Pa., and Conowingo, Md.; the Chemung River at Chemung, N.Y.; the Tioga River at Lindley, N.Y.; and the Cowanesque River at Lawrenceville, Pa. Stream discharges from USGS gaging stations are reported as instantaneous discharges in cubic feet per second (cfs). Instantaneous discharge for stations not located near USGS gaging stations were measured at the time of sampling, using standard USGS procedures.

Water Samples

Water samples were collected at each of the sites to measure nutrient and metal concentrations. The chemical and physical parameters are listed in table 4. Water samples were collected using a depth-integrating sampler.

Composite samples were obtained by collecting eight depth-integrated samples across the stream channel and combining them in a churn splitter, which was previously rinsed with distilled water. Sample water was thoroughly mixed in the churn splitter and collected for nutrient analysis in two 500 ml bottles, one filtered and one raw. Samples for metals analysis were collected in two acid rinsed 500 ml bottles, one filtered and one raw sample. Samples to be used for metals analysis were fixed with 2.0 ml of concentrated nitric acid (HNO_3). A cellulose nitrate filter with 0.45 micrometer pore size was used to obtain the filtrate for laboratory analysis. New filter paper was used at each station. The samples were chilled on ice and sent to the Pennsylvania Department of Environmental Resources (Pa. DER), Bureau of Laboratories in Harrisburg, Pa.

TABLE 2. Stream Stations Sampled Along the New York-Pennsylvania Border and Sampling Rationale

Station	Stream and Location	Monitoring Group	Rationale
SUSQ 365.0	Susquehanna River Windsor, N.Y.	1	Large drainage area (1,882 sq. mi.); municipal discharges from Cooperstown, Sidney, Bainbridge and Oneonta
CASC 1.6	Cascade Creek Lanesboro, Pa.	2	Monitor for potential water quality impacts
TROW 1.6	Trowbridge Creek Great Bend, Pa.	2	Monitor for potential water quality impacts
SNAK 2.3	Snake Creek Brookdale, Pa.	2	Monitor for potential water quality impacts
LSNK 7.6	Little Snake Creek Brackney, Pa.	2	Monitor for potential water quality impacts
SUSQ 340.0	Susquehanna River Kirkwood, N.Y.	1	Large drainage area (2,232 sq. mi.); historical pollution due to sewage from Lanesboro, Oakland, Susquehanna, Great Bend and Hallstead
CHOC 9.1	Choconut Creek Vestal Center, N.Y.	2	Monitor for potential water quality impacts
APAL 6.9	Apalachin Creek Little Meadows, Pa.	2	Monitor for potential water quality impacts
WAPP 2.6	Wappasening Creek Nichols, N.Y.	2	Monitor for potential water quality impacts
CAYT 1.7	Cayuta Creek Waverly, N.Y.	1	Municipal discharge from Waverly
NFCR 7.6	North Fork Cowanesque River, North Fork, Pa.	2	Monitor for potential water quality impacts
TRUP 4.5	Troups Creek Austinburg, Pa.	1	High turbidity and moderately impaired macroinvertebrate populations

TABLE 2. Stream stations sampled along the New York-Pennsylvania border and sampling rationale (Continued)

Station	Stream and Location	Monitoring Group	Rationale
HLDN 3.5	Holden Creek Woodhull, N.Y.	2	Monitor for potential water quality impacts
COWN 2.2	Cowanesque River Lawrenceville, Pa.	1	Impacts from flood control reservoir
TIOG 10.8	Tioga River Lindley, N.Y.	1	Pollution from acid mine discharges and impacts from flood control reservoirs.
SEEL 10.3	Seeley Creek Seeley Creek, N.Y.	2	Monitor for potential water quality impacts
SOUT 7.8	South Creek Fassett Pa.	2	Monitor for potential water quality impacts
BNTY 0.9	Bentley Creek Wellsburg, N.Y.	2	Monitor for potential water quality impacts
CHEM 12.0	Chemung River Chemung, N.Y.	1	Municipal and industrial discharges from Elmira
SUSQ 289.1	Susquehanna River Sayre, Pa.	1	Large drainage area (4,933 sq. mi.); municipal and industrial discharges

TABLE 3. Stream Stations Sampled Along the Pennsylvania-Maryland Border and Sampling Rationale

Station		Stream and Location	Monitoring Group	Rationale
SBCC	20.4	South Branch Conewago Creek, Bandanna, Pa.	2	Monitor for potential water quality impacts
LNGA	2.5	Long Arm Creek Bandanna, Pa.	2	Monitor for potential water quality impacts
SUSQ	44.5	Susquehanna River Marietta, Pa.	1	Bracket hydroelectric dams near the state line
SCTT	3.0	Scott Creek Delta, Pa.	1	Pollution from untreated sewage
CNWG	4.4	Conowingo Creek Pleasant Grove, Pa.	1	High nutrient loads and other agricultural runoff; Nonpoint runoff to Chesapeake Bay
OCTO	6.6	Octoraro Creek Rising Sun, Md.	1	High nutrient loads due to agricultural runoff from New Bridge, Md. Water quality impacts from Octoraro Lake; Nonpoint runoff to Chesapeake Bay
EBAU	1.5	Ebaughs Creek Stewartstown, Pa.	1	Municipal discharge from Stewartstown; Nonpoint runoff to Chesapeake Bay
DEER	44.5	Deer Creek Gorsuch Mills, Md.	1	Past pollution from Gorsuch Mills, Md., Stewartstown, Pa.; Nonpoint runoff to Chesapeake Bay
BBDC	4.1	Big Branch Deer Creek Fawn Grove, Pa.	2	Monitor for potential water quality impacts
FBDC	4.1	Falling Branch Deer Creek, Fawn Grove, Pa.	2	Monitor for potential water quality impacts
SUSQ	10.0	Susquehanna River Conowingo, Md.	1	Bracket hydroelectric dams near state line.

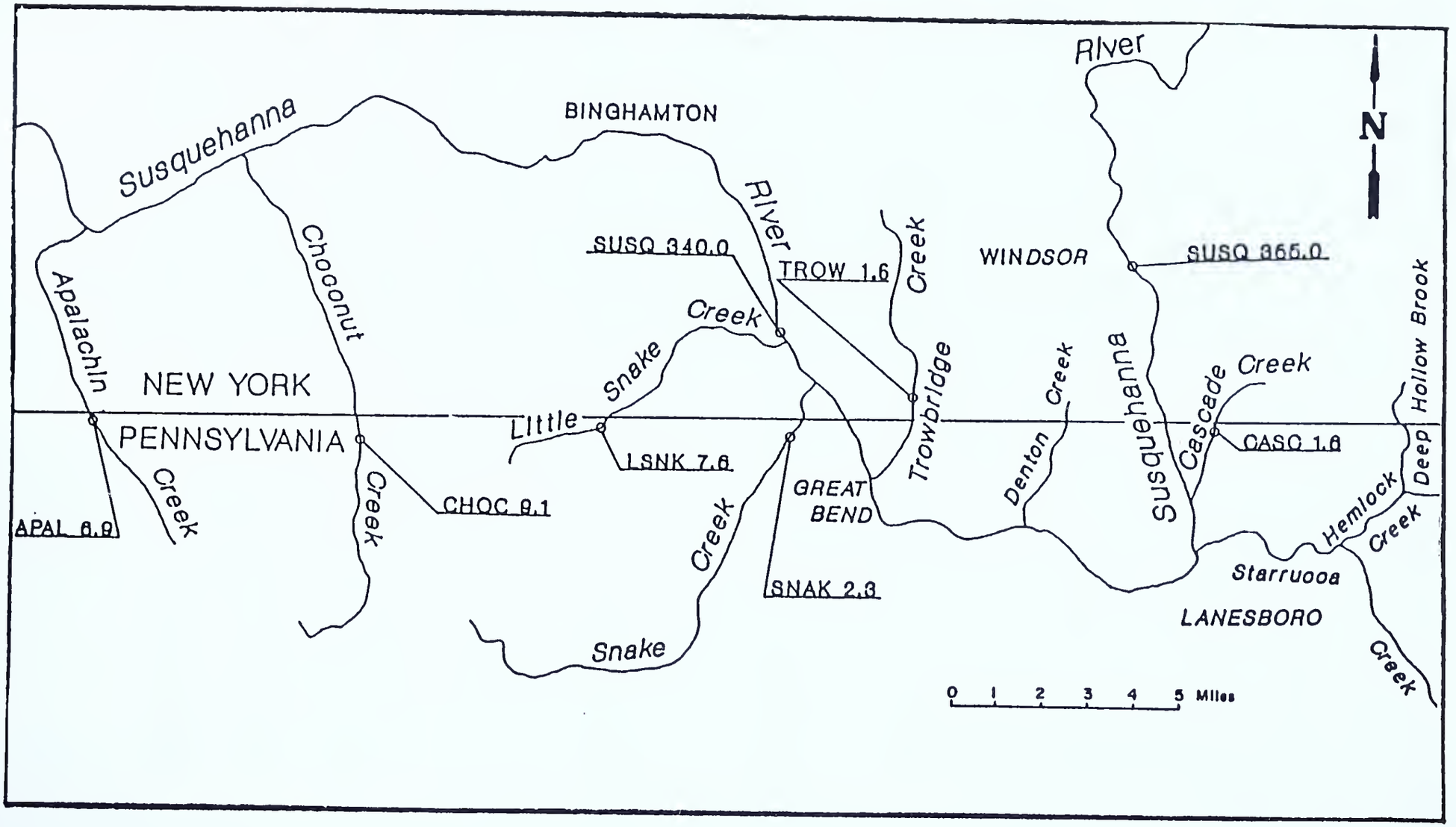


FIGURE 2. Interstate Streams Along the New York-Pennsylvania Border Between Apalachin Creek and Cascade Creek

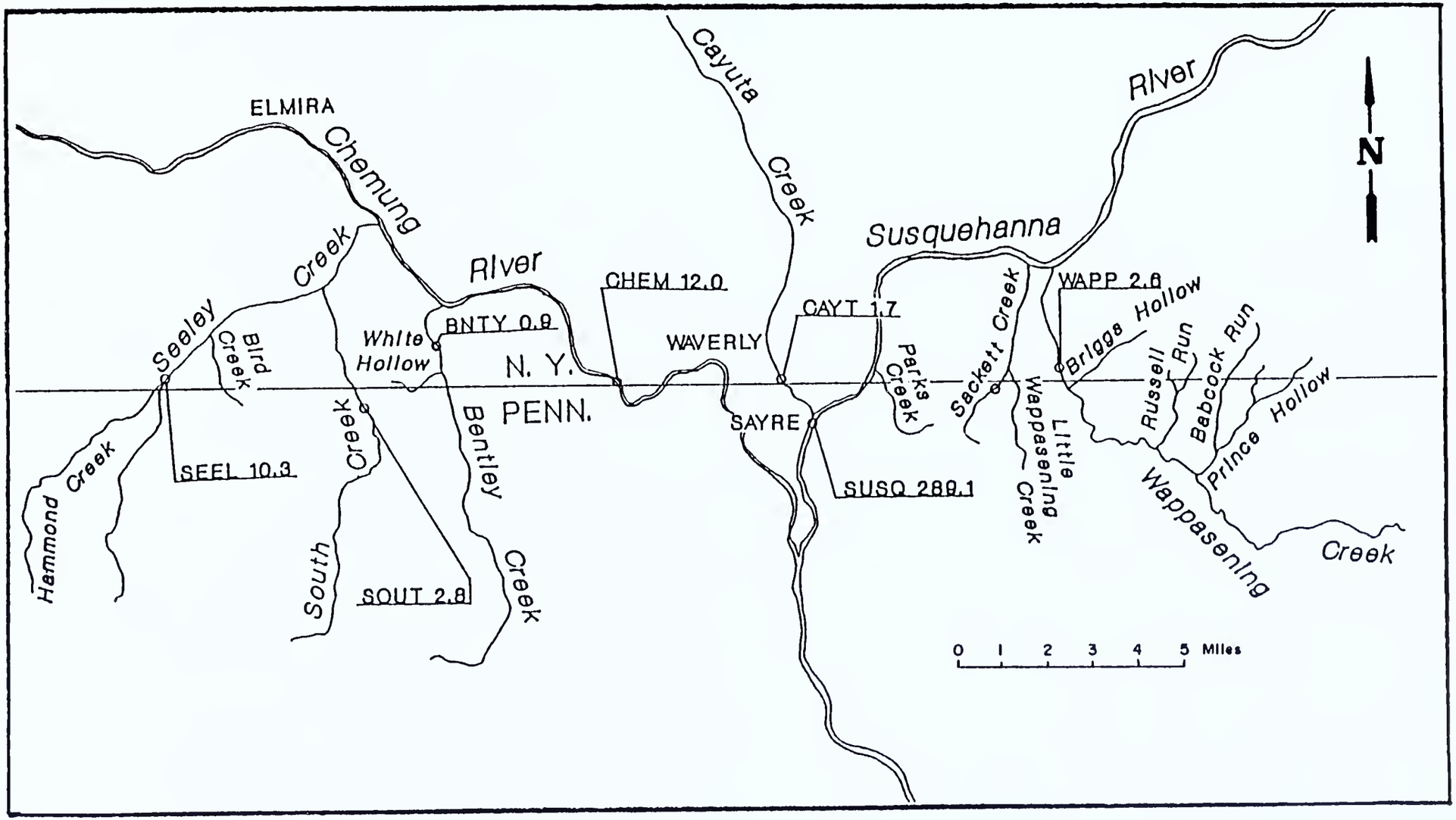


FIGURE 3. Interstate Streams Along the New York-Pennsylvania Border Between Seeley Creek and Wappasening Creek

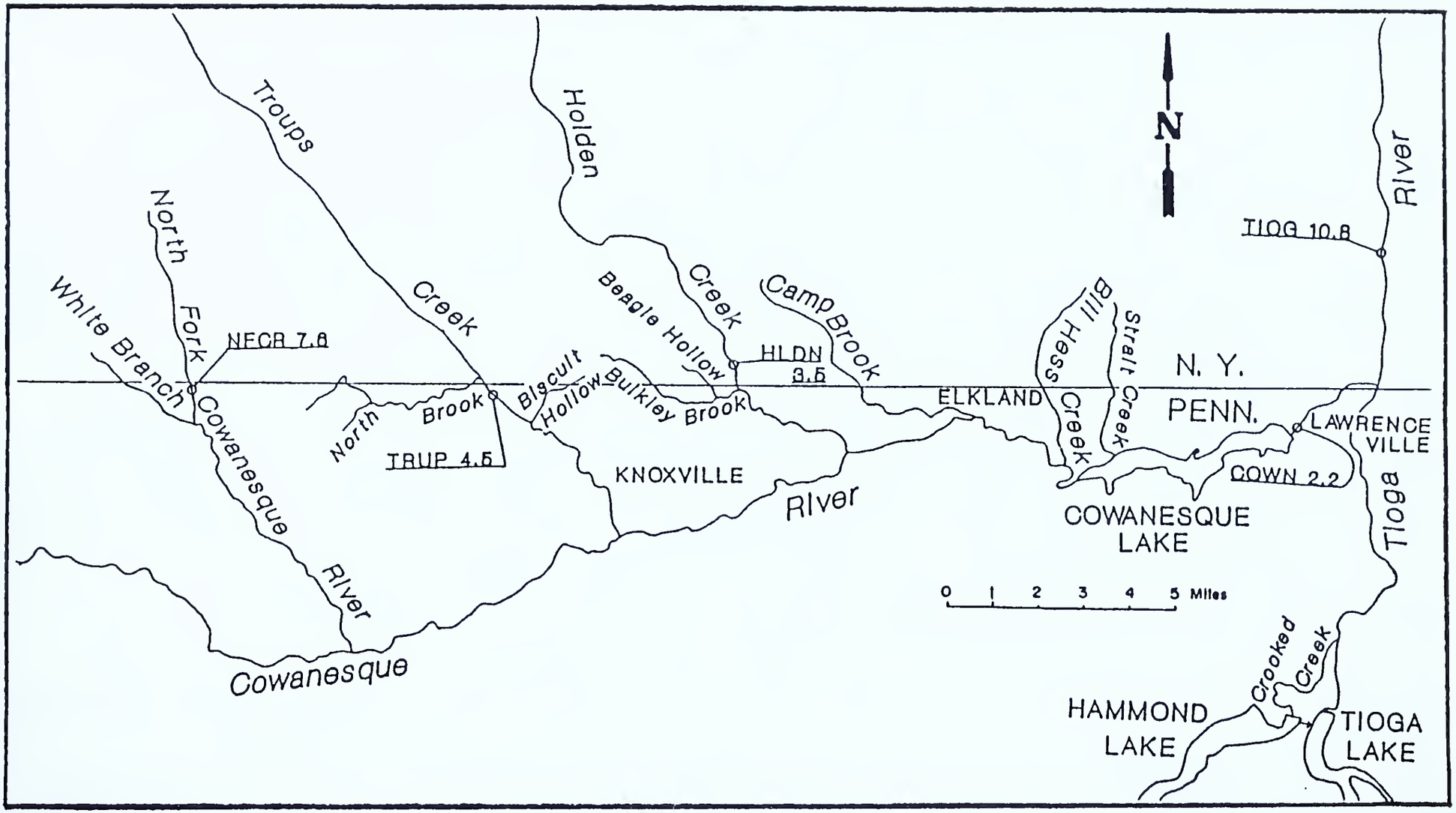


FIGURE 4. Interstate Streams Along the New York-Pennsylvania Border Between North Fork Cowanesque River and Tioga River

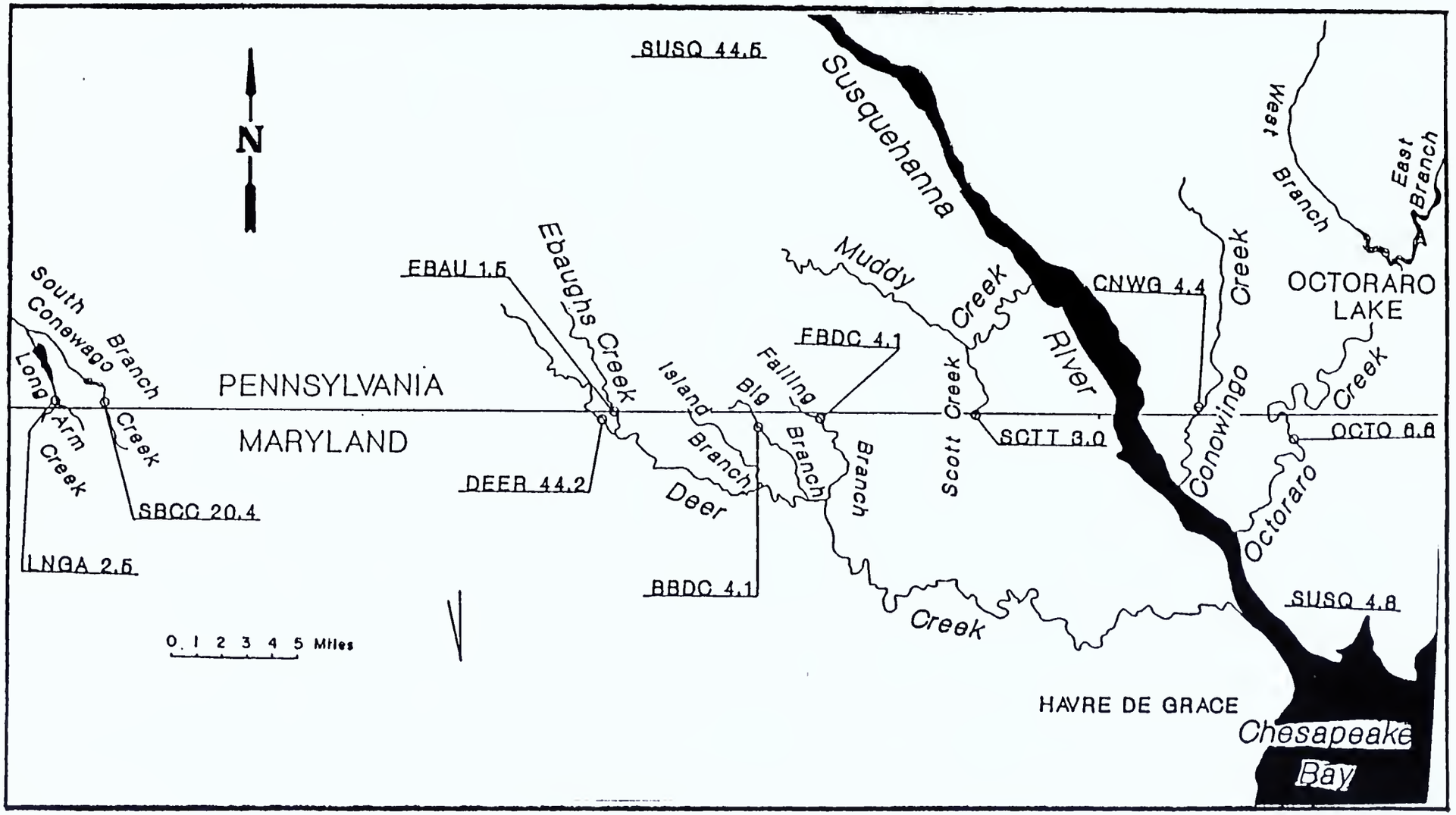


FIGURE 5. Interstate Streams Along the Pennsylvania-Maryland Border

TABLE 4. Monitored Parameters

Parameter	STORET Code
Physical	
Discharge	00060
Temperature	00010
Chemical	
Field Analyses	
Conductivity	00095
Dissolved Oxygen	00300
pH	00400
Alkalinity	00410
Acidity	00435
Free chlorine	50064
Laboratory Analyses	
Biochemical Oxygen Demand	00310
Solids - Dissolved	00515
Total	00500
Ammonia as Nitrogen - Dissolved	00608
Total	00610
Nitrite as Nitrogen - Dissolved	00613
Total	00615
Nitrate as Nitrogen - Dissolved	00618
Total	00620
Kjeldahl Nitrogen - Dissolved	00623
Total	00625
Phosphorus - Dissolved	00666
Total	00665
Orthophosphate - Dissolved	00671
Total	70507
Organic Carbon - Total	00680
Magnesium - Total	00927
Chloride - Total	00940
Sulfate - Total	00945
Iron - Dissolved	01046
Total	01045
Manganese - Dissolved	01056
Total	01055
Aluminum - Dissolved	01106
Total	01105
Turbidity	82079

Field Chemistry

Temperature, dissolved oxygen, conductivity, pH, alkalinity, acidity, and chlorine were measured in the field. Temperature and dissolved oxygen were measured using a YSI model 54A dissolved oxygen meter. The dissolved oxygen meter was calibrated at the beginning of each day that water samples were collected. A Beckman solu-bridge conductivity meter was used to measure conductivity. An Orion model 399A meter was used to measure pH. The pH meter was calibrated at the beginning of each day and randomly checked during the day. Alkalinity was determined by titrating a known volume of sample water to pH 4.5 with 0.02 normal sulfuric acid ($H2SO_4$). Acidity was measured by titrating a known volume of sample water to pH 8.3 with 0.02 normal sodium hydroxide (NaOH). Total free chlorine was measured using a Lamotte 4497-DR, Model PC7-DR chlorine test kit.

Macroinvertebrate Sampling

Benthic macroinvertebrates were collected from Group 1 and Group 2 stations between July 22 and August 5, 1991. Macroinvertebrates were sampled to provide an indication of the ecological condition of the stream. Macroinvertebrates are defined as aquatic insects and other invertebrates that are too large to pass through a #30 sieve. Both qualitative and quantitative macroinvertebrate collections were performed at each site.

Qualitative sampling was performed using a kick screen. A seine was stretched across the current and a hoe was used to dislodge the macroinvertebrates from the substrate. The current carried the dislodged macroinvertebrates into the seine. The macroinvertebrates were picked from the seine and preserved in alcohol for identification in the laboratory. This procedure was repeated until no new taxa were collected.

Quantitative samples were collected using a Surber sampler. This device is a 1-foot-square frame with a #30 mesh net. The sampler was placed on the streambed in a shallow riffle. The substrate inside the frame was agitated, and large rocks within the frame were scrubbed with a nylon brush to dislodge clinging macroinvertebrates. The current carried the macroinvertebrates into the net. The contents of the seine were removed and preserved in alcohol for identification in the laboratory.

Data Synthesis

Results of laboratory analyses for chemical parameters were compared to state water quality standards. In addition, a simple water quality index (WQI) was calculated, using procedures established by McMorran (1989). The Water Quality index was used to make comparisons between sampling periods and stations within the same geographical region; therefore, the water quality data were divided into two groups. One group contained stations along the New York-Pennsylvania border and the other group contained stations along the Pennsylvania-Maryland border. The data in each group were sorted by parameter and ranked by increasing order of magnitude. The rank of each chemical analysis was divided by the total number of observations in the group to obtain a percentile. The Water Quality Index score was calculated by averaging all the percentile ranks for each sample.

RESULTS

The water quality in most interstate streams continues to meet designated use classes and water quality standards. The parameter that most frequently exceeded water quality standards was total iron (table 5, figure 6). Manganese exceeded standards on four occasions. Only 19 out of 2,667 observations exceeded water quality standards.

New York-Pennsylvania Border Streams

A slightly impaired biological community exists in Cayuta Creek. Elevated nutrient concentrations observed in Cayuta Creek indicate that waste water discharges from the Waverly sewage treatment facility may be affecting the macroinvertebrate community.

The Chemung River is affected by waste water discharges from the City of Elmira, N.Y., which contribute to high Water Quality Index values and a slightly impaired biological community.

A moderately-impaired biological community was found in Seeley Creek. The community was impaired by the drought that occurred during the summer of 1991. Large portions of Seeley Creek were dry.

Acid mine drainage in the headwaters of the Tioga River contributes to poor water quality downstream to the Tioga-Hammond Reservoir. Water quality improves significantly below the Tioga-Hammond Reservoir; however, some impacts from the acid mine drainage may still be detected in the river. Elevated concentrations of sulfates and metals contribute to high Water Quality Index scores and a slightly impaired macroinvertebrate community.

Pennsylvania-Maryland Border Streams

Long Arm Creek contains good quality water; however, a moderately impaired biological community was found in the stream. The macroinvertebrate community has been affected by intense grazing pressure around the sampling site which resulted in physical disruption of the streambed.

Scott Creek at Delta, Pa., is severely degraded by raw sewage discharges from Cardiff, Md. Concentrations of the chemical parameters were high in most of the samples, including six observations that exceeded water quality standards. Iron and manganese were the most common parameters that exceeded standards. Water Quality Index values were extremely high, especially during periods of low flow. High stream flows and runoff events appear to dilute the pollutants resulting in lower Water Quality Index values. All Water Quality Index values were much higher than those for most other streams. The macroinvertebrate community is severely impaired by the raw sewage discharges. In 1991, only eight taxa were collected and the community was dominated by pollution tolerant species.

Conowingo Creek continues to have elevated nutrient concentrations and high Water Quality Index values. Agriculture is the most prevalent land use in the watershed, and excess nutrients may enrich the stream. Total and dissolved nitrate concentrations were high throughout the sampling period. Macroinvertebrate analysis indicates that a moderately impaired biological community exists in Conowingo Creek.

TABLE 5. Water Quality Standards

Parameter	Number of Observations	Number Exceeding Standard	Standard
Total iron	89	8	N.Y. Health (water source)
		5	Pa. chronic fish criteria
Dissolved iron	89	1	Pa. chronic fish criteria
Total manganese	89	2	Pa. water supply criteria
Dissolved manganese	89	2	Pa. water supply criteria
pH	89	1	Pa.

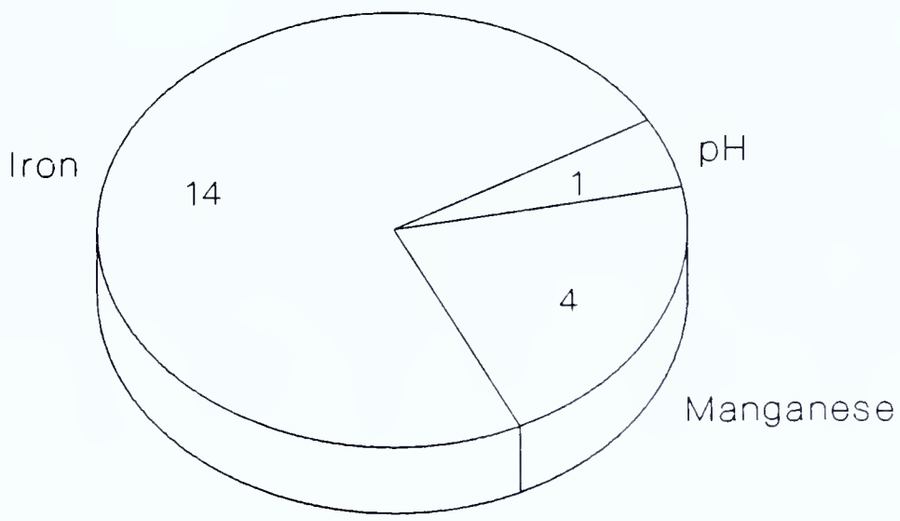


FIGURE 6. Parameters Exceeding Water Quality Standards

Deer Creek at Gorsuch Mills, Md., shows signs of slight to moderate macroinvertebrate impairment. Water Quality data do not suggest any possible sources of degradation.

Station summaries are presented in tables 6 through 34. These include are listings of parameters exceeding water quality standards, Water Quality Index values and parameters that exceeded the 90th percentile at each station. Graphs are provided showing historical comparisons for water quality over the monitoring period.

Abbreviations used in tables 6 through 34

Abbrev.	Parameter	Abbrev.	Parameter
ALK	Alkalinity		
BOD	Biochemical O_2 Demand		
COND	Conductivity		
DAl	Dissolved Aluminum	TAl	Total Aluminum
		TCl	" Chloride
DFe	" Iron	TFe	" Iron
DKN	" Kjeldahl N	TKN	" Kjeldahl N
		TMg	" Magnesium
DMn	" Manganese	TMn	" Manganese
DNH3	" Ammonia	TNH3	" Ammonia
DNO2	" Nitrite	TNO2	" Nitrite
DNO3	" Nitrate	TNO3	" Nitrate
DO	" Oxygen		
DP	" Phosphorus	TP	" Phosphorus
DPO4	" Orthophosphate	TPO4	" Orthophosphate
DS	" Solids	TS	" Solids
		TSO4	" Sulfate
		TOC	" Org. Carbon
		TURB	" Turbidity

WQI--Water Quality Index

TABLE 6. Water Quality Summary Susquehanna River at Windsor, N.Y.

Parameters Exceeding Standards

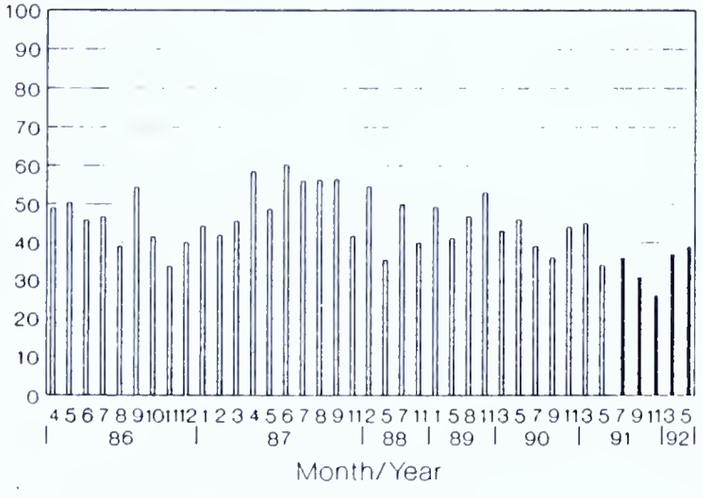
Parameter	Date	Value	Standard	State
TFe	03/16/92	387 ug/l	300 ug/l	N.Y. Health (water source) and aquatic

Date	WQ Index	Parameters Exceeding 90th Percentile
07/22/91	36	
09/16/91	31	DKN
11/04/91	26	
03/16/92	37	DFe
05/18/92	39	

Biological Summary

Number of taxa:	19
Diversity index:	3.44
RBP score:	46
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

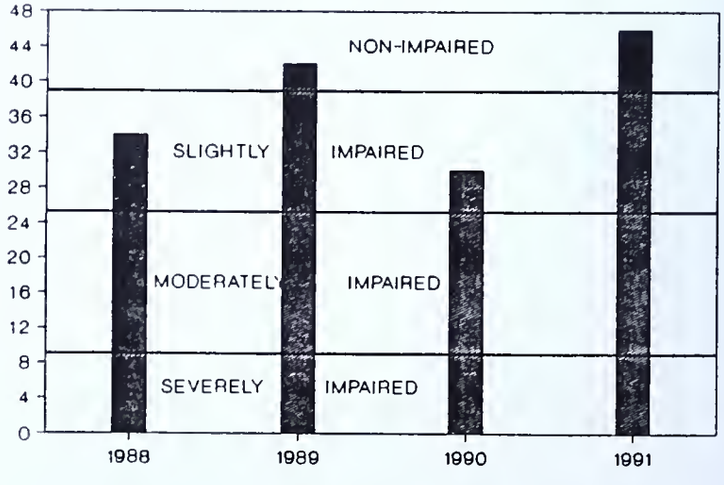


TABLE 7. Water Quality Summary Trowbridge Creek at Great Bend, Pa.

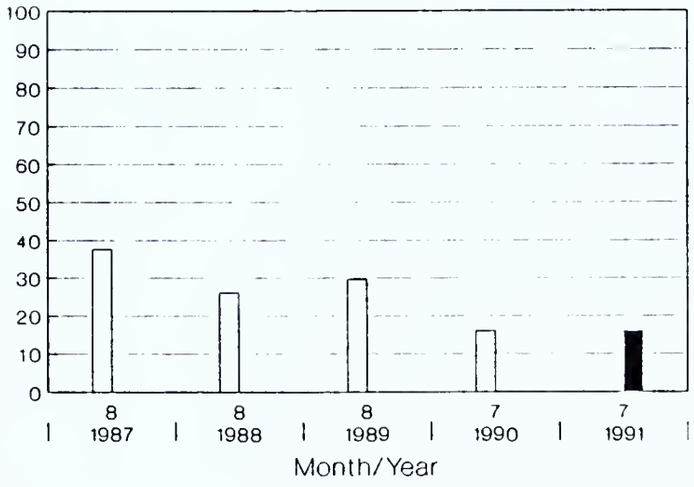
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/22/91	16	

Biological Summary

Number of taxa:	13
Diversity index:	3.22
RBP score:	26
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

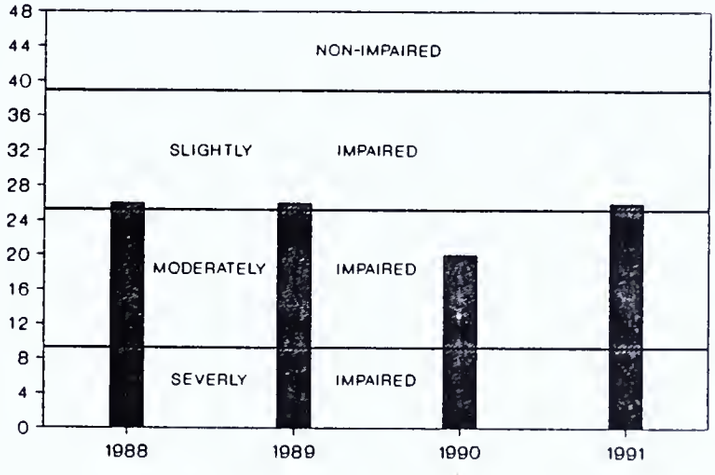


TABLE 8. Water Quality Summary Snake Creek at Brookdale, Pa.

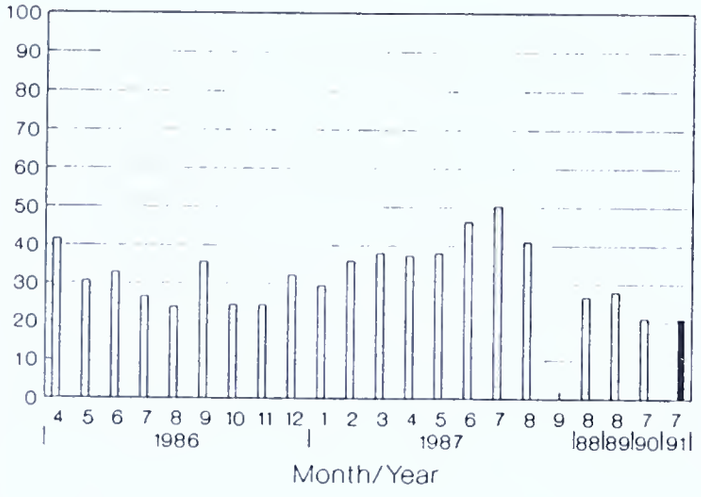
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/22/91	21	

Biological Summary

Number of taxa:	22
Diversity index:	3.59
RBP score:	48
RBP condition:	Reference

Water Quality Index



Biological Index

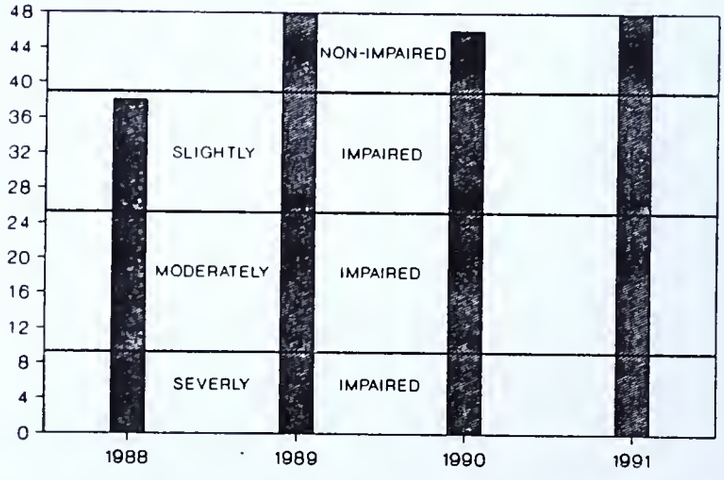


TABLE 9. Water Quality Summary Little Snake Creek at Brackney, Pa.

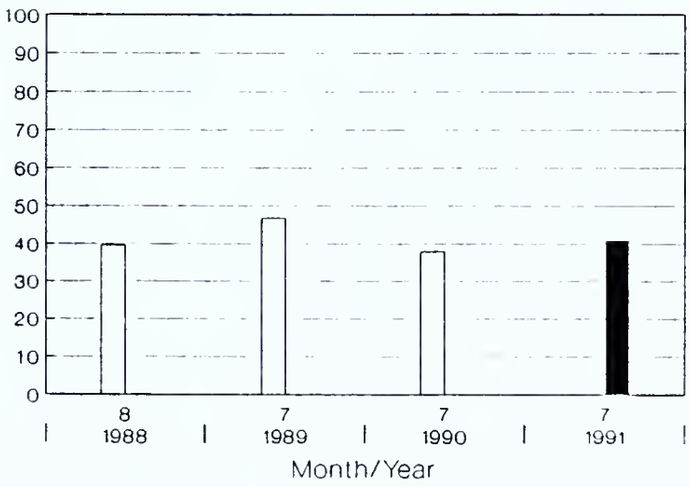
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
TFe	07/23/91	501 ug/l	300 ug/l	N.Y. Health (water source) and aquatic

Date	WQ Index	Parameters Exceeding 90th Percentile
07/23/91	41	TFe DFe

Biological Summary

Number of taxa:	18
Diversity index:	3.47
RBP score:	38
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

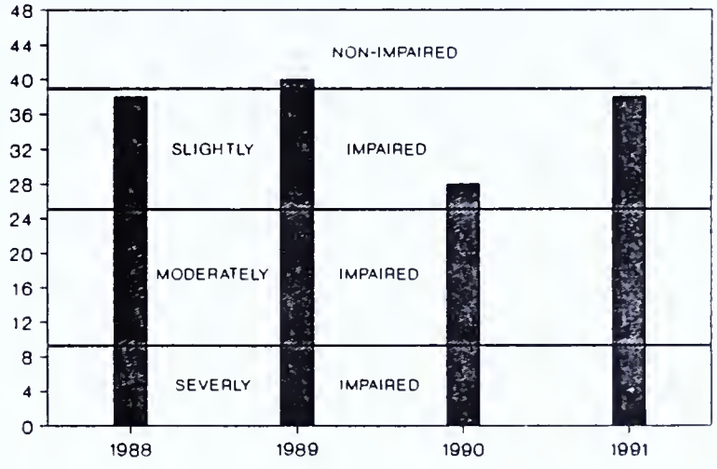


TABLE 10. Water Quality Summary Susquehanna River at Kirkwood, N.Y.

Parameters Exceeding Standards

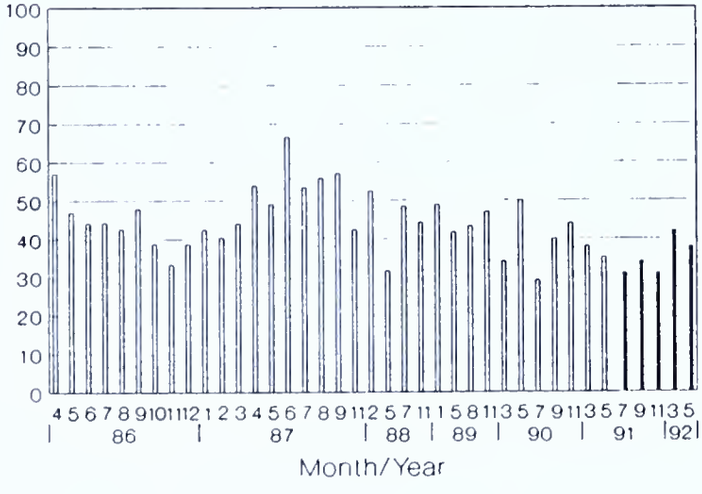
Parameter	Date	Value	Standard	State
TFe	11/04/91	406 ug/l	300 ug/l	N.Y. Health (water source) and aquatic
TFe	03/16/92	363 ug/l	300 ug/l	N.Y. Health (water source) and aquatic

Date	WQ Index	Parameters Exceeding 90th Percentile
07/22/91	31	TNH3
09/16/91	34	
11/04/92	31	TFE
03/16/92	42	DNH3 TNH3 TURB
05/18/92	38	

Biological Summary

Number of taxa:	23
Diversity index:	3.88
RBP score:	44
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

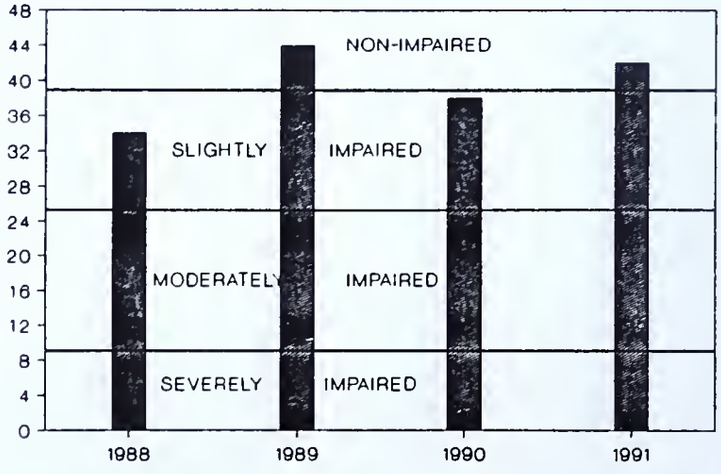


TABLE 11. Water Quality Summary Choconut Creek at Vestal Center, N.Y.

Parameters Exceeding Standards

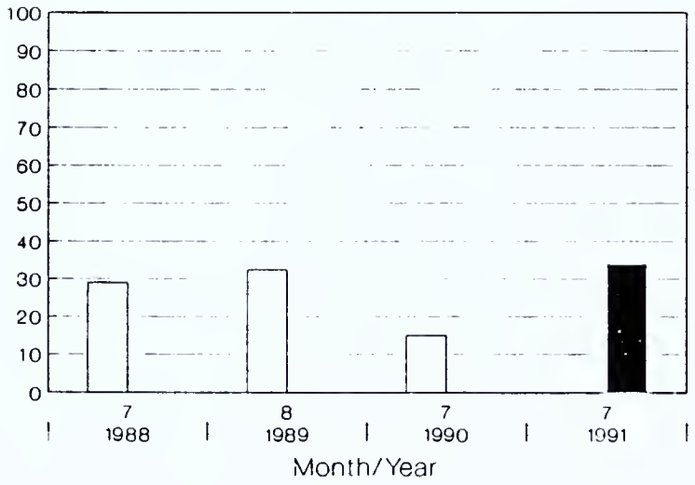
Parameter	Date	Value	Standard	State
TFe	07/23/91	683 ug/l	300 ug/l	N.Y. Health (water source) and aquatic

Date	WQ Index	Parameters Exceeding 90th Percentile
07/23/91	34	TFe

Biological Summary

Number of taxa:	20
Diversity index:	3.71
RBP score:	46
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

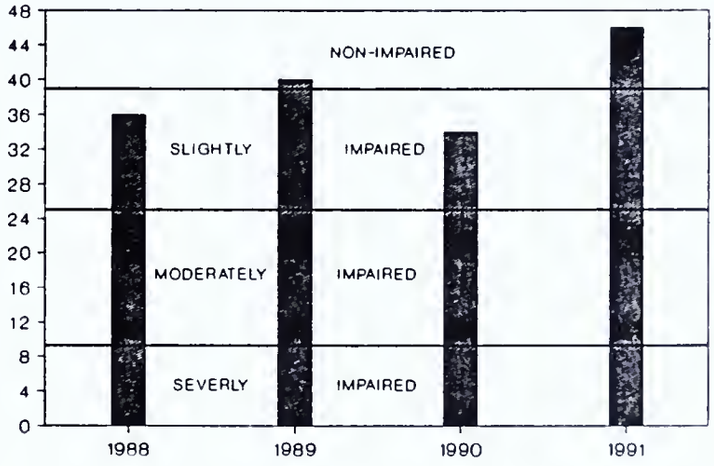


TABLE 12. Water Quality Summary Apalachin Creek at Little Meadows, Pa.

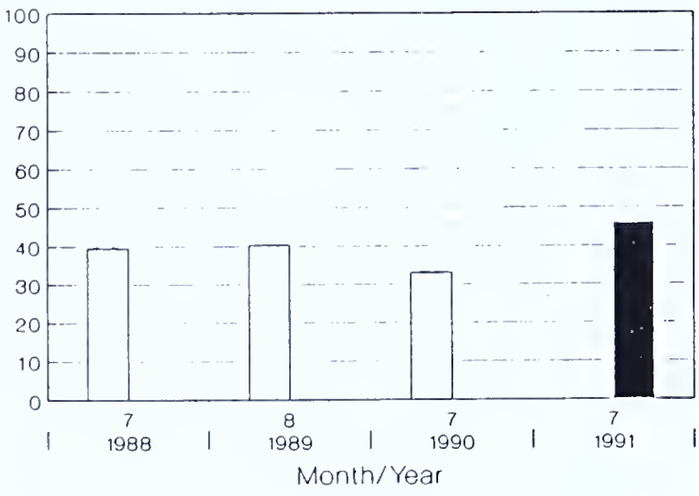
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
TFe	07/23/91	560 ug/l	300 ug/l	N.Y. Health (water source) and aquatic

Date	WQ Index	Parameters Exceeding 90th Percentile
07/23/91	46	TNH3 TFe DFe TMn DMn

Biological Summary

Number of taxa:	19
Diversity index:	3.69
RBP score:	40
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

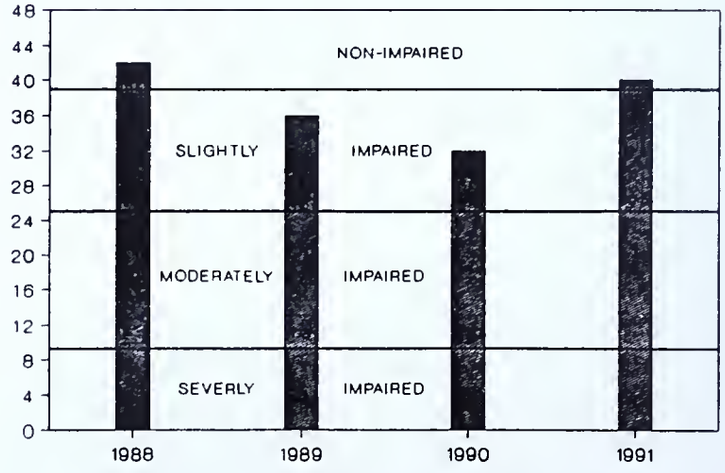


TABLE 13. Water Quality Summary Wappasening Creek at Nichols, N.Y.

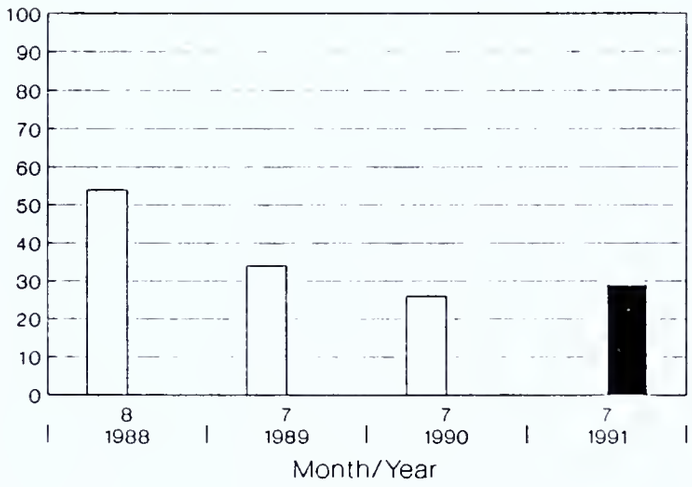
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/23/91	29	

Biological Summary

Number of taxa:	20
Diversity index:	3.57
RBP score:	44
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

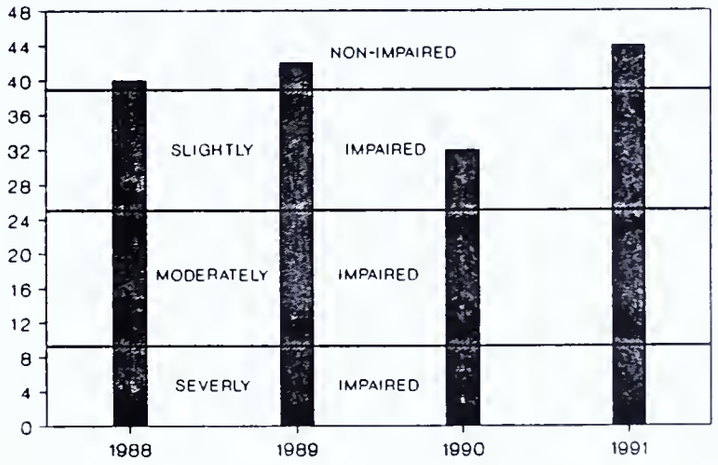


TABLE 14. Water Quality Summary Cayuta Creek at Waverly, N.Y.

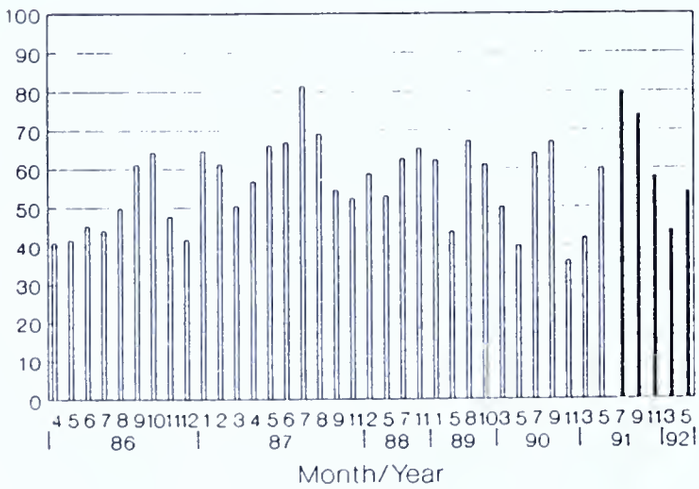
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/23/91	80	COND TS DS DNO2 TNO2 DNO3 TNO3 DKN TP DP DPO4 TOC TC1 TSO4 TA1 DA1 TPO4
09/16/91	74	COND BOD TS DS TNH3 DNO2 TNO2 DNO3 TNO3 DKN TKN TP DP DPO4 TOC TMg TC1 TSO4 TPO4
11/04/91	58	COND TS DS DNO3 TNO3 TP DP DPO4 TC1 TSO4 TPO4
03/16/92	44	DNH3
05/18/92	54	TNO2 TPO4

Biological Summary

Number of taxa:	18
Diversity index:	3.23
RBP score:	34
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

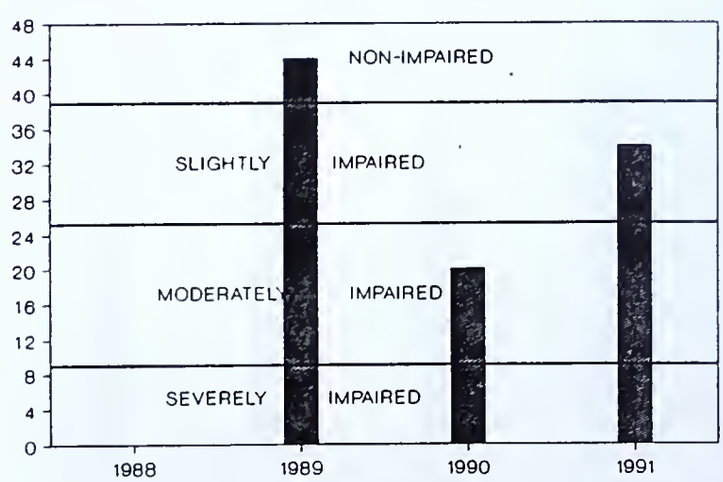


TABLE 15. Water Quality Summary North Fork Cowanesque River at North Fork, Pa.

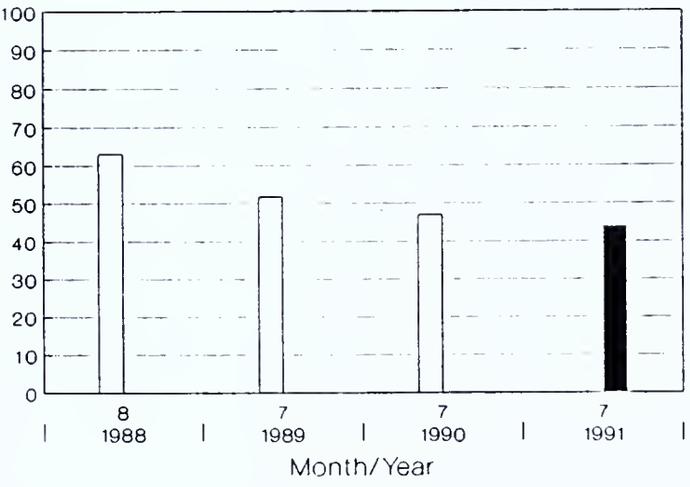
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/24/91	44	TA1

Biological Summary

Number of taxa:	21
Diversity index:	3.78
RBP score:	44
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

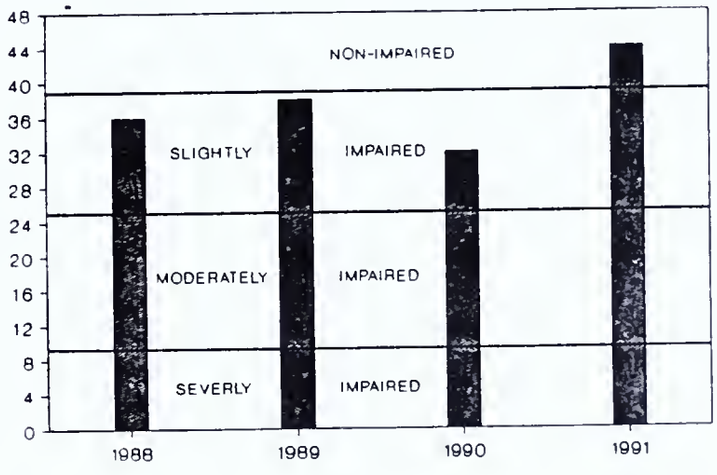


TABLE 16. Water Quality Summary Troups Creek at Austinburg, Pa.

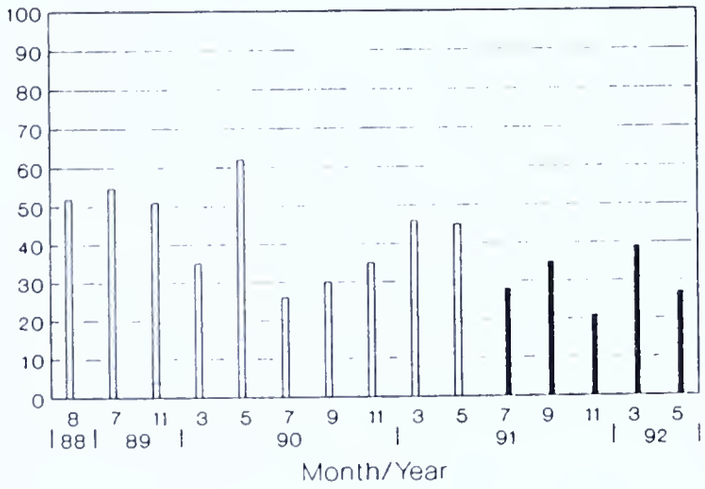
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
pH	05/19/92	9.20	6.0 - 9.0	Pa.

Date	WQ Index	Parameters Exceeding 90th Percentile
07/25/91	28	
09/18/91	35	
11/05/91	21	
03/17/92	39	DNO3 TNO3
05/19/92	27	

Biological Summary

Number of taxa:	19
Diversity index:	3.67
RBP score:	42
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

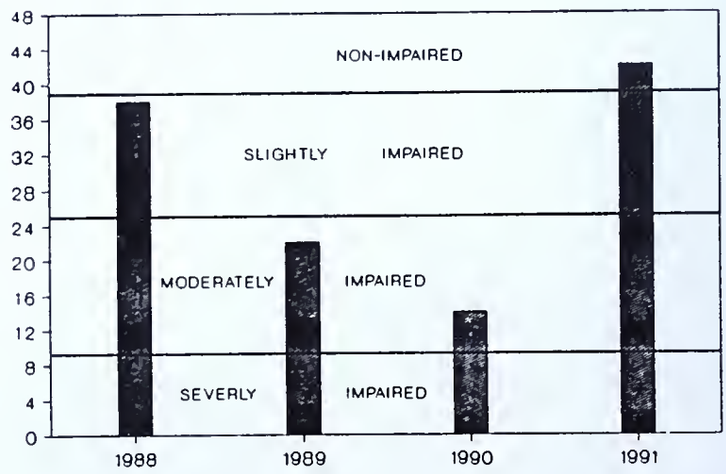


TABLE 17. Water Quality Summary Cowanesque River at Lawrenceville, Pa.

Parameters Exceeding Standards

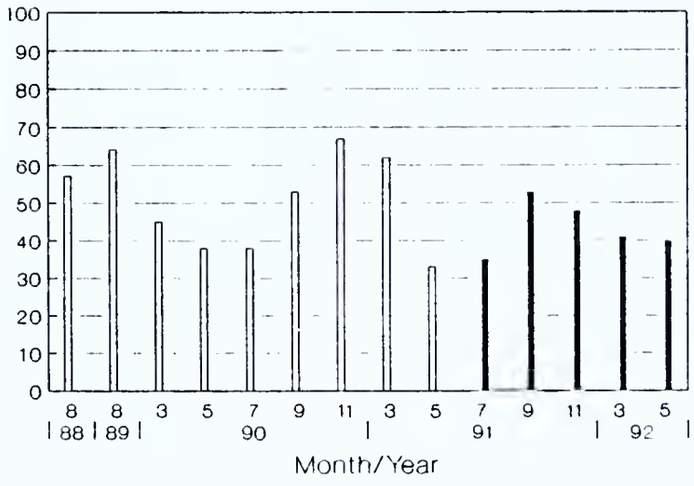
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/25/91	35	
09/17/91	53	TS DS DNH3 TNH3 TMn DMn
11/05/91	48	
03/17/92	41	
05/19/92	40	DNH3

Biological Summary

Number of taxa:	14
Diversity index:	3.21
RBP score:	34
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

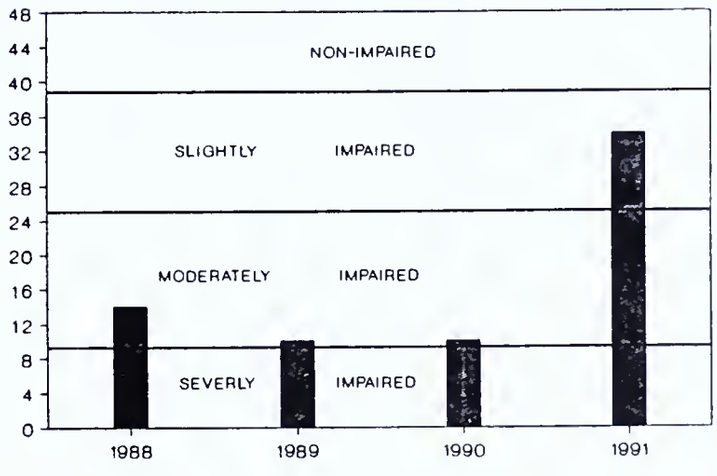


TABLE 18. Water Quality Summary Tioga River at Lindley, N.Y.

Parameters Exceeding Standards

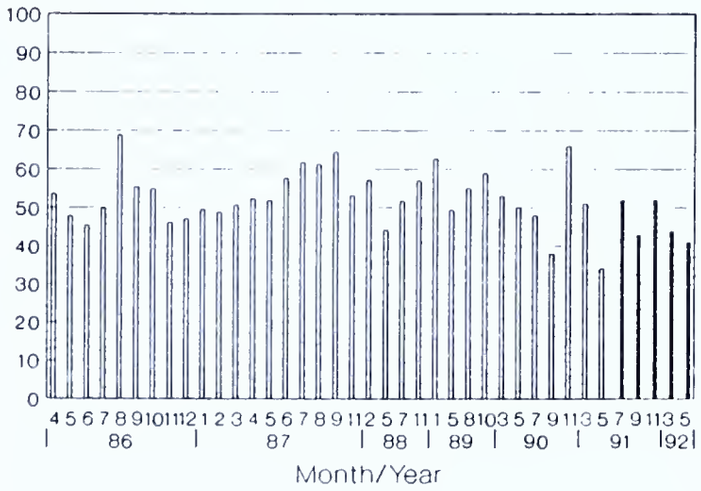
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/23/91	52	TSO4 TA1 DA1
09/17/91	43	DMn
11/05/91	52	BOD DKN TKN TOC TSO4
03/17/92	44	TMn DMn
05/19/92	41	DMn

Biological Summary

Number of taxa:	16
Diversity index:	3.23
RBP score:	30
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

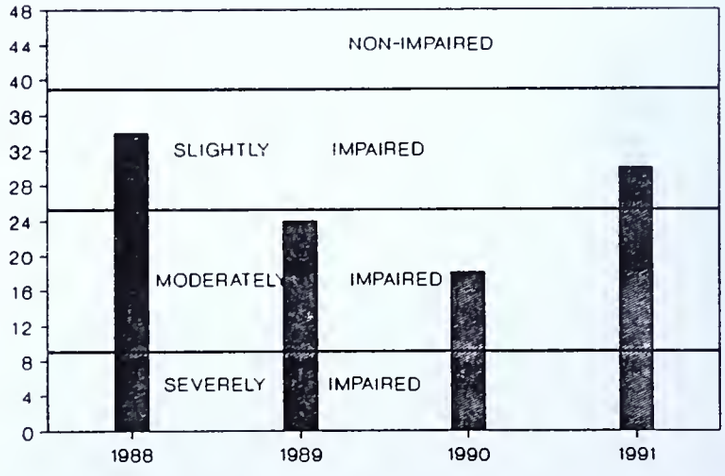


TABLE 19. Water Quality Summary Seeley Creek at Seeley Creek, N.Y.

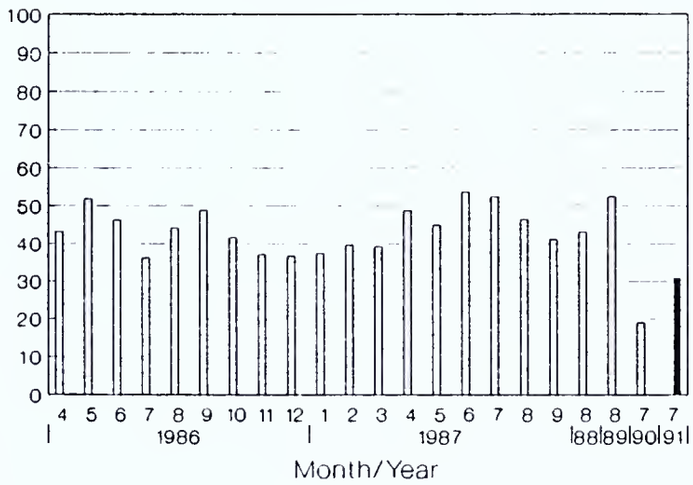
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/24/91	31	

Biological Summary

Number of taxa:	17
Diversity index:	2.90
RBP score:	24
RBP condition:	Moderately impaired

Water Quality Index



Biological Index

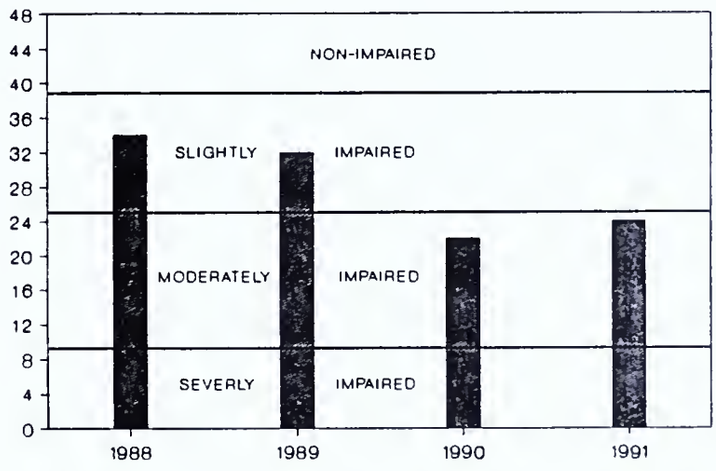


TABLE 20. Water Quality Summary South Creek at Fassett, Pa.

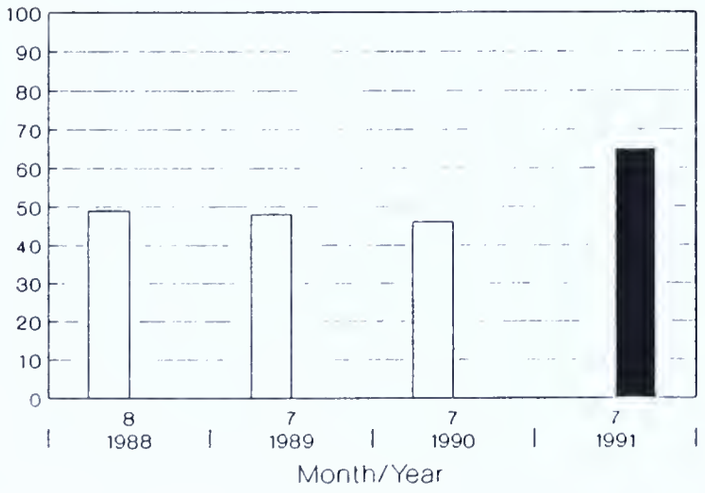
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
TFe	07/24/91	400 ug/l	300 ug/l	N.Y. Health (water source) and aquatic
DFe	"	555 ug/l	300 ug/l	N.Y. and Pa. chronic human health and N.Y. chronic fish

Date	WQ Index	Parameters Exceeding 90th Percentile
07/24/91	65	TOC DFe DA1

Biological Summary

Number of taxa:	16
Diversity index:	3.12
RBP score:	26
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

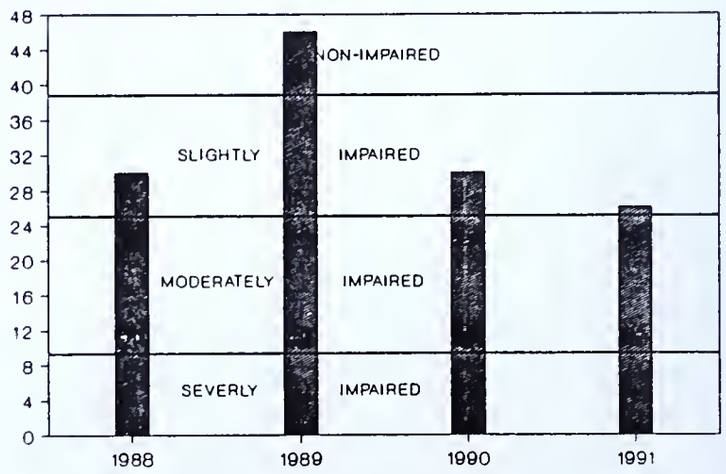


TABLE 21. Water Quality Summary Bentley Creek at Wellsburg, N.Y.

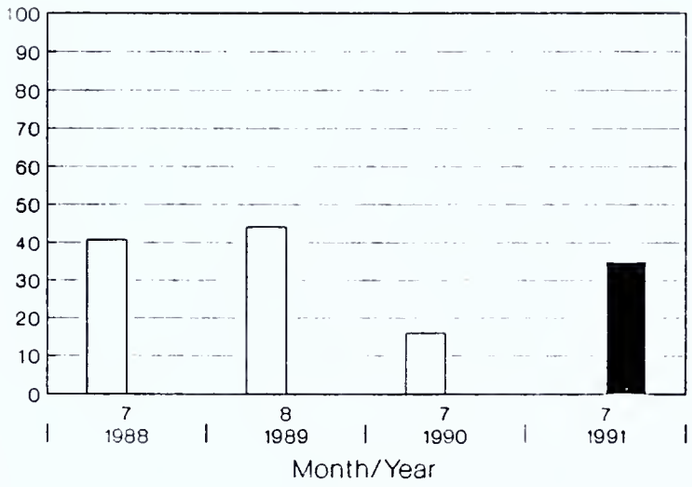
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/24/91	35	TA1 DA1

Biological Summary

Number of taxa:	19
Diversity index:	3.49
RBP score:	36
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

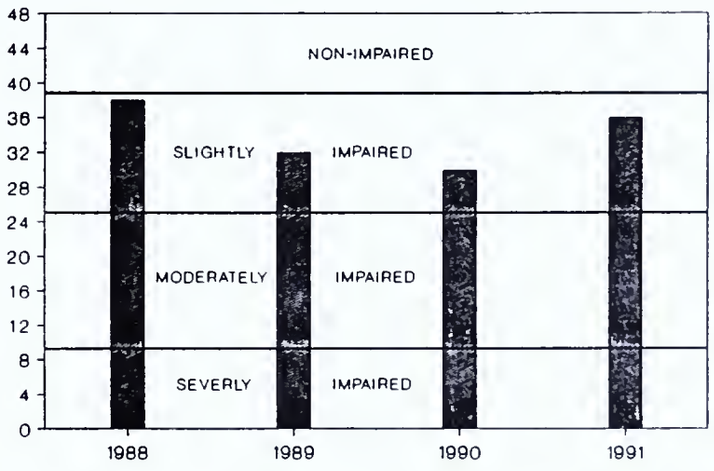


TABLE 22. Water Quality Summary Chemung River at Chemung, N.Y.

Parameters Exceeding Standards

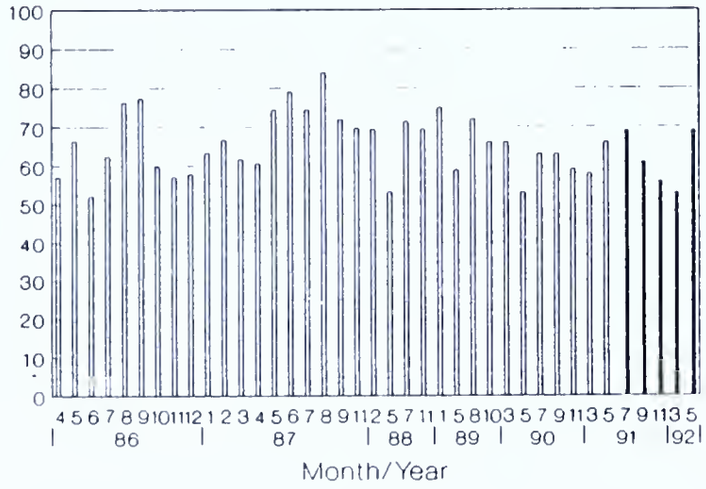
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile								
07/24/91	69	BOD	TKN	TOC	TMg	TMn	TA1	DA1		
09/17/91	61	COND	TS	DS	TMg	TC1				
11/04/91	56	COND	DNO3	TNO3	TP	DP	DPO4	TMg	TC1	TPO4
03/16/92	53									
05/19/92	69	DNO2	TNO2	TKN						

Biological Summary

Number of taxa:	19
Diversity index:	3.60
RBP score:	30
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

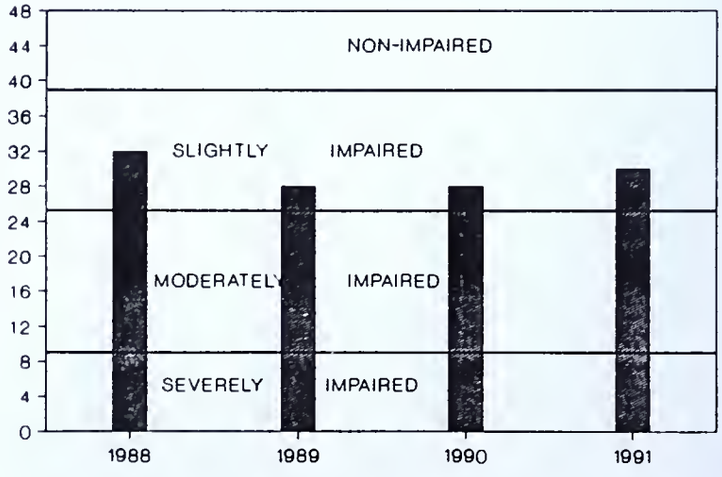


TABLE 23. Water Quality Summary Susquehanna River at Sayre, Pa.

Parameters Exceeding Standards

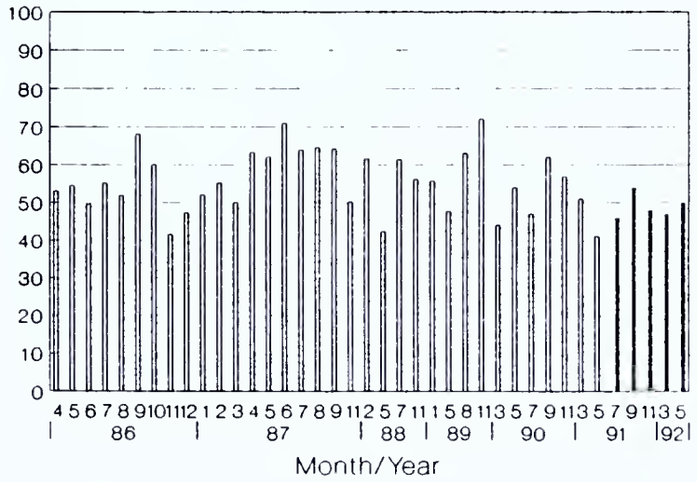
Parameter	Date	Value	Standard	State
TFe	03/16/92	462 ug/1	300 ug/1	N.Y. Health (water source) and aquatic

Date	WQ Index	Parameters Exceeding 90th Percentile
07/22/91	46	BOD
09/16/91	54	DKN TKN
11/04/91	48	DNO2
03/16/92	47	TFe
05/18/92	50	DNO2 DFe

Biological Summary

Number of taxa:	16
Diversity index:	3.26
RBP score:	42
RBP condition:	Nonimpaired

Water Quality Index



Biological Index

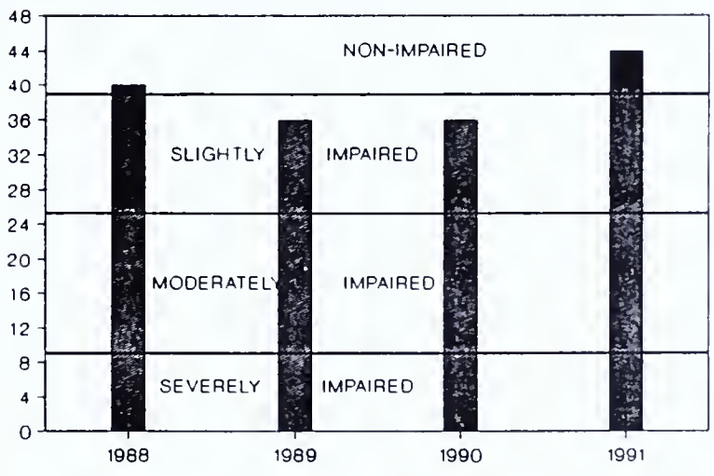


TABLE 24. Water Quality Summary South Branch Conewago Creek at Bandanna, Pa.

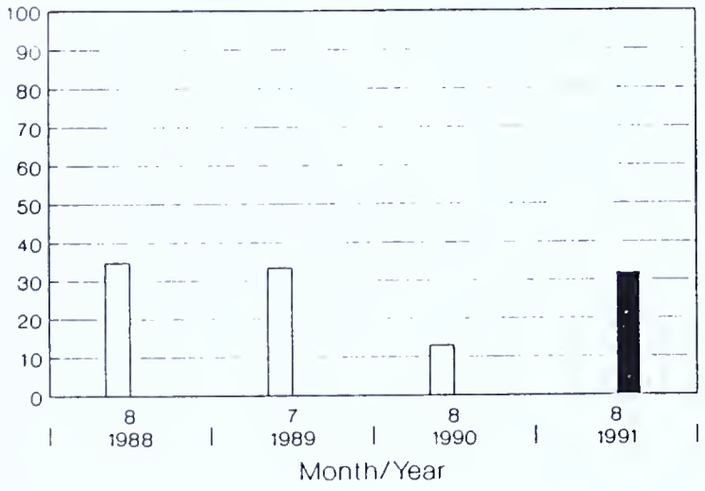
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/29/91	32	TA1

Biological Summary

Number of taxa:	22
Diversity index:	3.90
RBP score:	48
RBP condition:	Reference

Water Quality Index



Biological Index

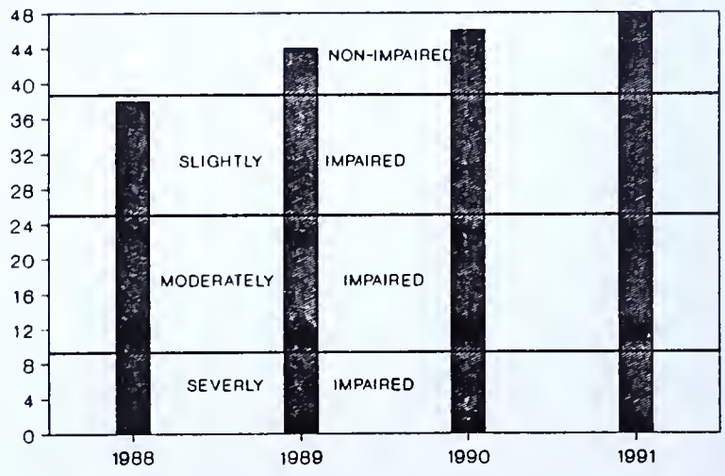


TABLE 25. Water Quality Summary Long Arm Creek at Bandanna, Pa.

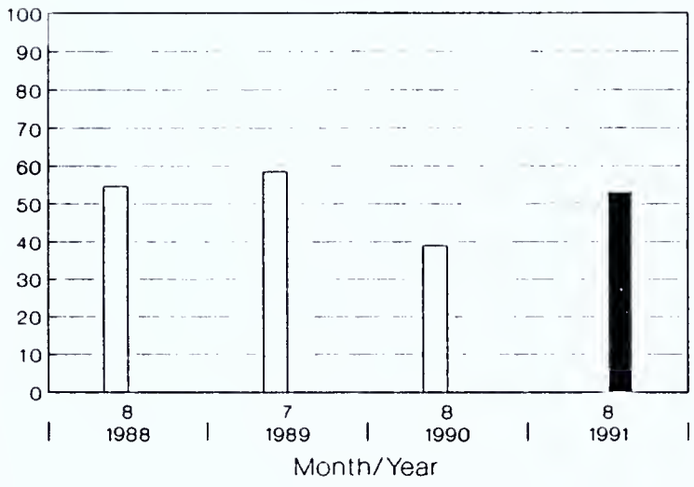
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/29/91	53	

Biological Summary

Number of taxa:	11
Diversity index:	2.40
RBP score:	18
RBP condition:	Moderately impaired

Water Quality Index



Biological Index

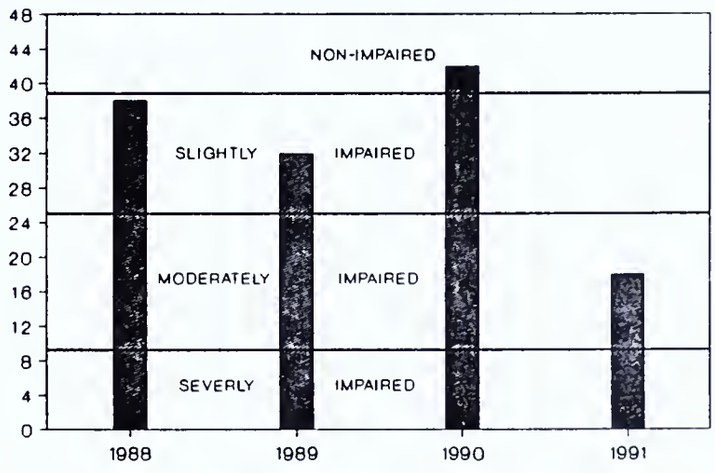


TABLE 26. Water Quality Summary Susquehanna River at Marietta, Pa.

Parameters Exceeding Standards

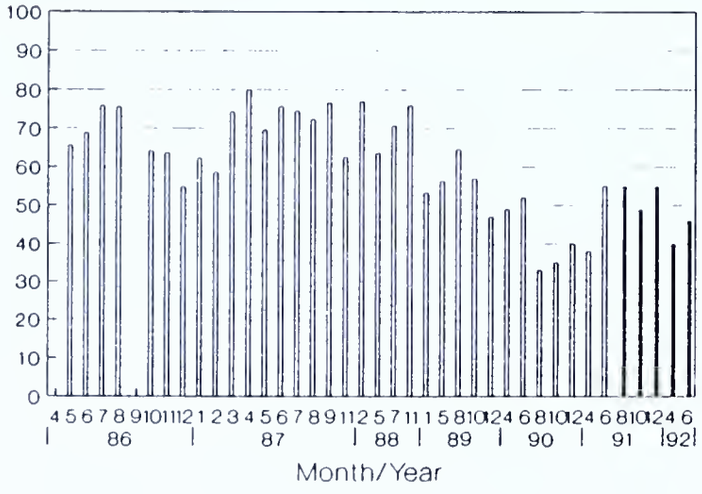
Parameter	Date	Value	Standard	State
TFe	04/22/92	1,570 ug/l	1,500 ug/l	Pa. chronic fish

Date	WQ Index	Parameters Exceeding 90th Percentile
08/05/91	55	COND TS DS TMg TSO4
10/09/91	49	COND TS DS TMg TSO4
12/11/91	55	
04/22/92	40	
06/18/92	46	BOD

Biological Summary

Number of taxa:	16
Diversity index:	3.22
RBP score:	36
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

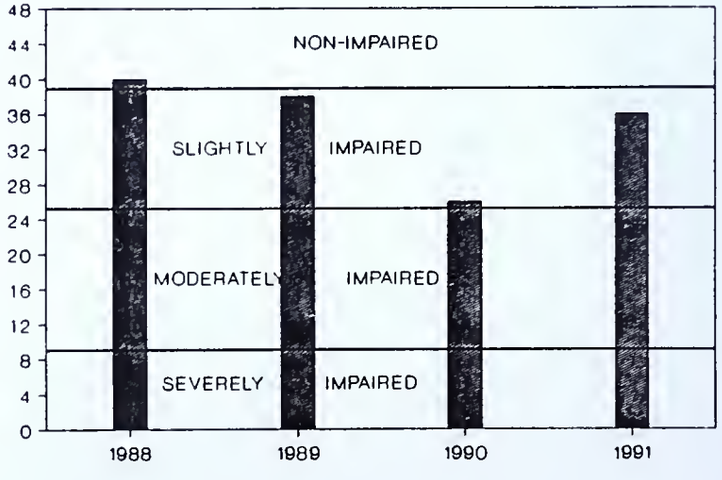


TABLE 27. Water Quality Summary Scott Creek at Delta, Pa.

Parameters Exceeding Standards

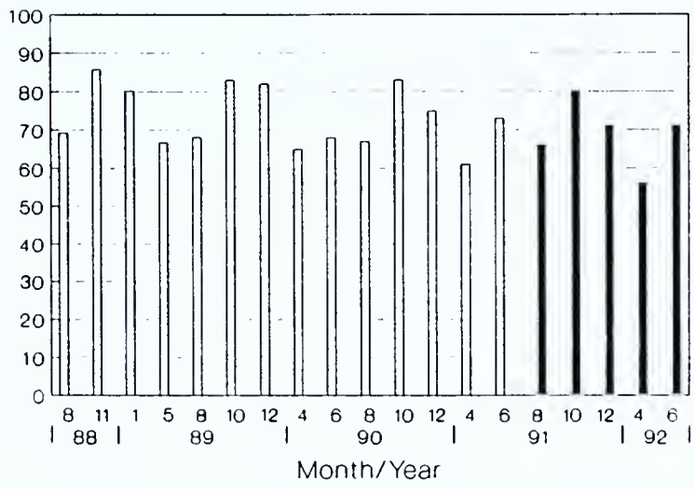
Parameter	Date	Value	Standard	State
TFe	07/31/91	1,630 ug/l	1,500 ug/l	Pa. chronic fish criteria
TFe	10/07/91	4,940 ug/l	1,500 ug/l	Pa. chronic fish criteria
TMn	"	1,190 ug/l	1,000 ug/l	Pa. chronic fish criteria
DMn	"	1,050 ug/l	1,000 ug/l	Pa. chronic fish criteria
TMn	06/16/92	1,240 ug/l	1,000 ug/l	Pa. chronic fish criteria
DMn	"	1,030 ug/l	1,000 ug/l	Pa. chronic fish criteria

Date	WQ Index	Parameters Exceeding 90th Percentile
07/31/91	66	DNO2 TNO2 TP DP DPO4 TFe
10/07/91	80	BOD DNH3 TNH3 DKN TKN TP TOC TMg TFe DFe TMn DMn
12/09/91	71	COND DNH3 TNH3 DKN DP DPO4 TMg DMn
04/20/92	56	
06/16/92	71	BOD DNH3 TNH3 DNO2 TNO2 DKN TKN DFe TMn DMn

Biological Summary

Number of taxa:	8
Diversity index:	2.50
RBP score:	8
RBP condition:	Severely impaired

Water Quality Index



Biological Index

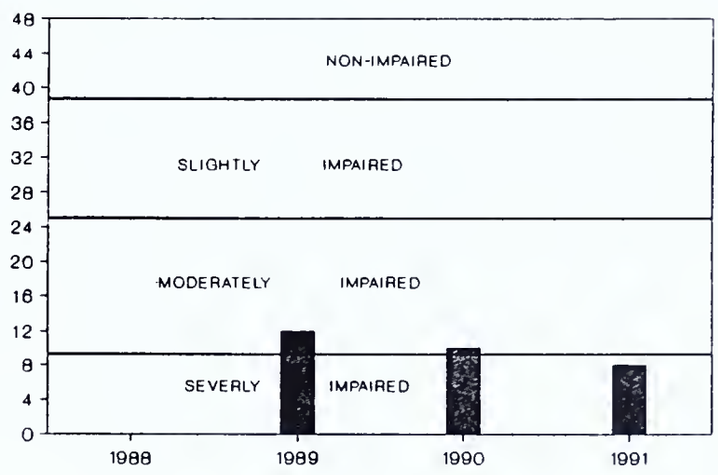


TABLE 28. Water Quality Summary Conowingo Creek at Pleasant Grove, Pa.

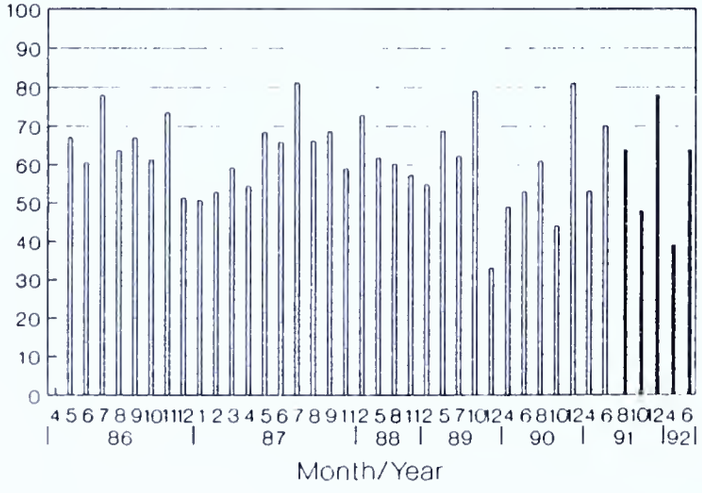
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
TFe	12/10/91	1,730 ug/l	1,500 ug/l	Pa. chronic fish

Date	WQ Index	Parameters Exceeding 90th Percentile
08/05/91	64	DNO3 TNO3
10/08/91	48	DNO3 TNO3
12/10/91	78	BOD DNH3 TNH3 DKN TKN TP DP DPO4 TOC TFe TMn TAl TPO4
04/21/92	39	DNO3 TNO3
06/17/92	64	DNO3 TNO3

Biological Summary

Number of taxa:	14
Diversity index:	3.21
RBP score:	24
RBP condition:	Moderately impaired

Water Quality Index



Biological Index

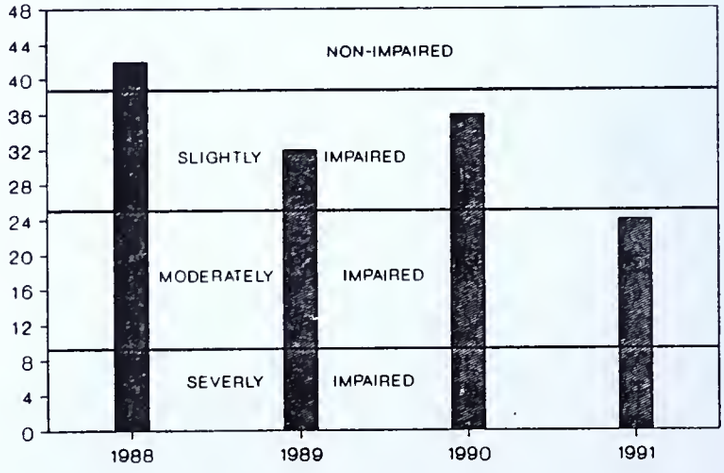


TABLE 29. Water Quality Summary Octoraro Creek at Rising Sun, Md.

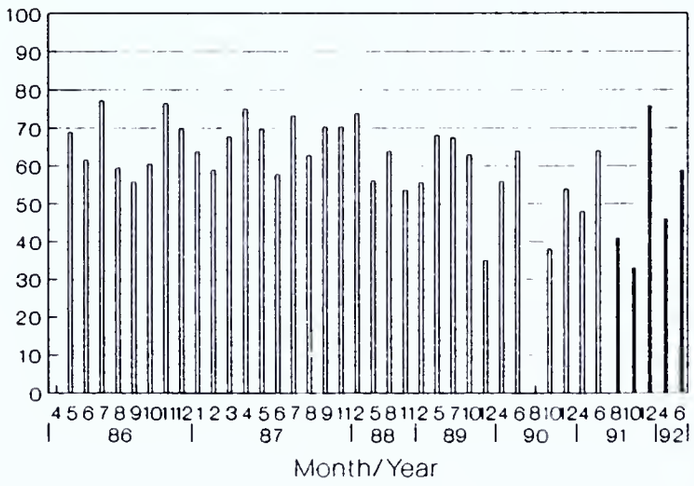
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
TFe	12/10/91	2,130 ug/l	1,500 ug/l	Pa. chronic fish

Date	WQ Index	Parameters Exceeding 90th Percentile
07/31/91	41	
10/08/91	33	
12/10/91	76	TKN TP DP DPO4 TOC TFe TAl TPO4
04/21/92	46	
06/17/92	59	TOC DFe

Biological Summary

Number of taxa:	16
Diversity index:	3.46
RBP score:	30
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

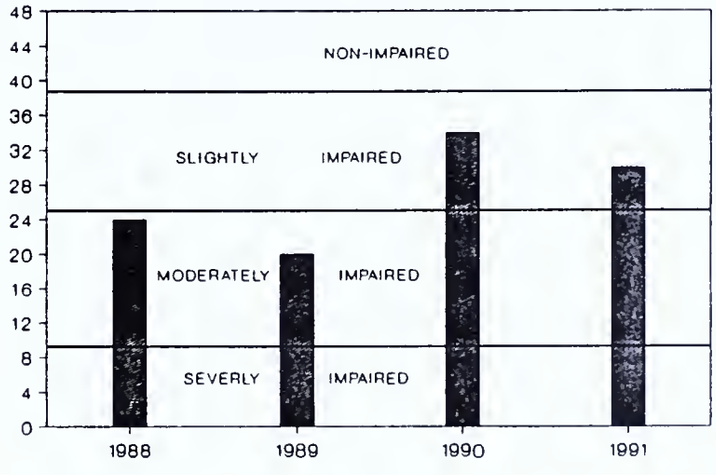


TABLE 30. Water Quality Summary Ebaughs Creek at Stewartstown, Pa.

Parameters Exceeding Standards

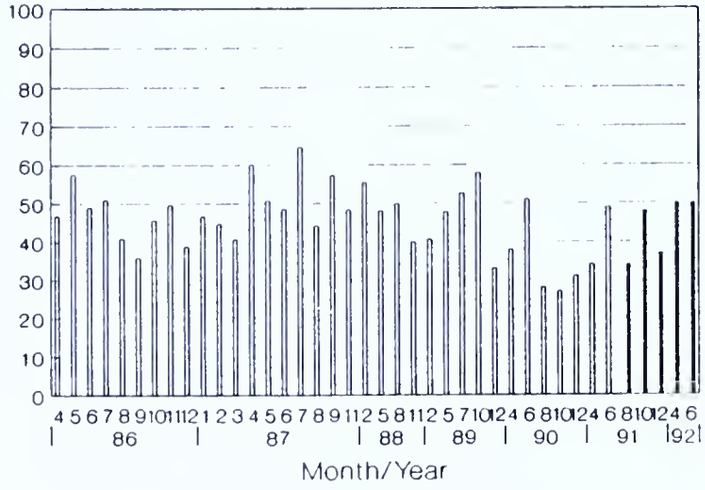
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile		
07/30/91	34			
10/07/91	48	TS	DS	TC1
12/09/91	37	TC1		
04/20/92	50	COND	DS	TC1
06/16/92	50	TC1		

Biological Summary

Number of taxa:	16
Diversity index:	3.23
RBP score:	26
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

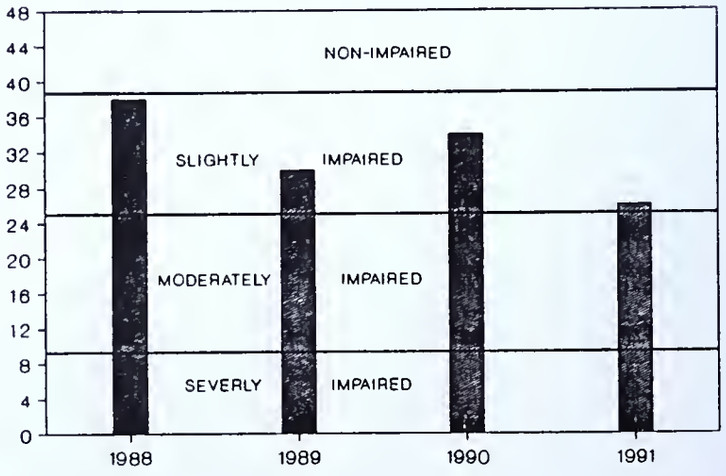


TABLE 31. Water Quality Summary Deer Creek at Gorsuch Mills, Md.

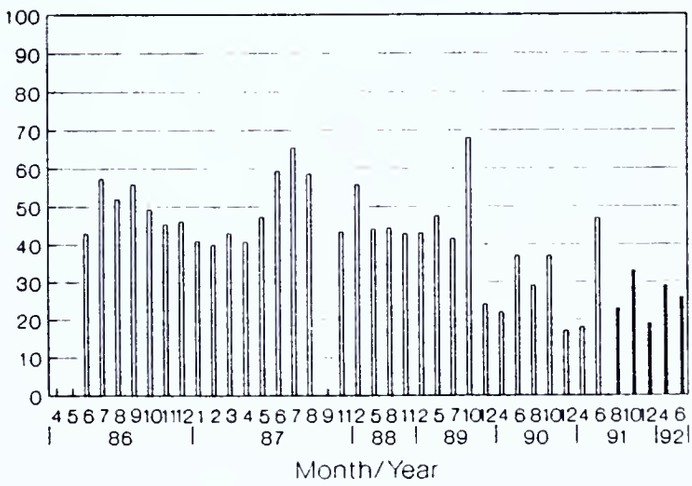
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/29/91	23	
10/07/91	33	
12/09/91	19	
04/20/92	29	
06/16/92	26	

Biological Summary

Number of taxa:	16
Diversity index:	3.31
RBP score:	24
RBP condition:	Moderately impaired

Water Quality Index



Biological Index

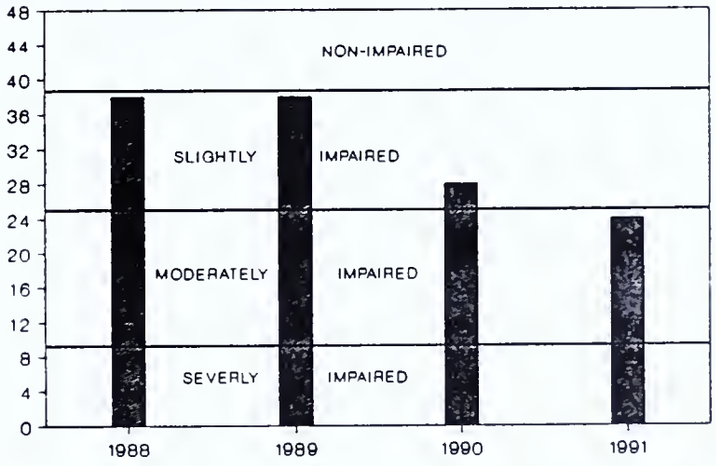


TABLE 32. Water Quality Summary Big Branch Deer Creek at Fawn Grove, Pa.

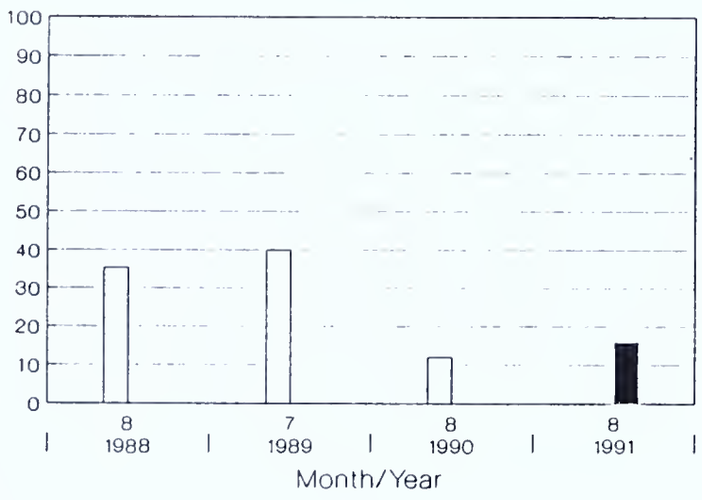
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/30/91	16	

Biological Summary

Number of taxa:	15
Diversity index:	3.46
RBP score:	34
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

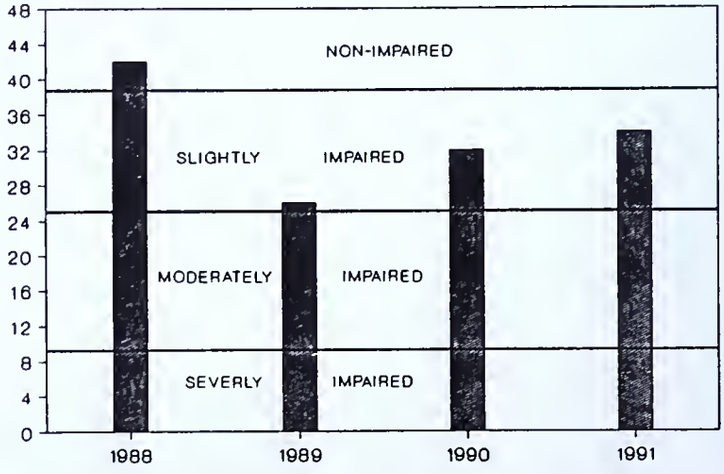


TABLE 33. Water Quality Summary Falling Branch Deer Creek at Fawn Grove, Pa.

Parameters Exceeding Standards

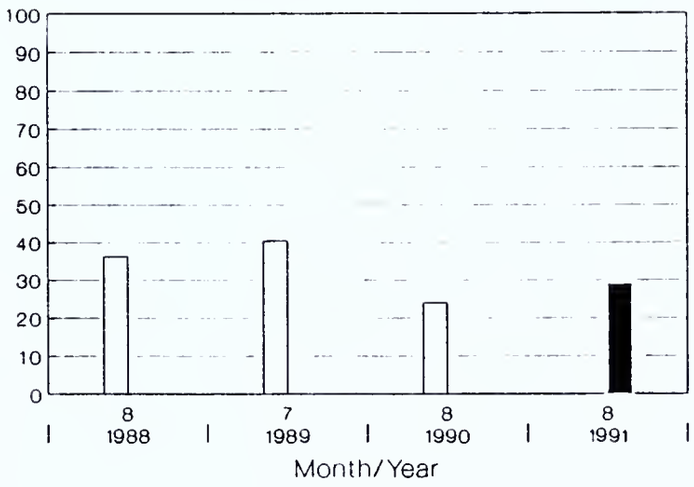
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile
07/30/91	29	DFe

Biological Summary

Number of taxa:	20
Diversity index:	3.48
RBP score:	32
RBP condition:	Slightly impaired

Water Quality Index



Biological Index

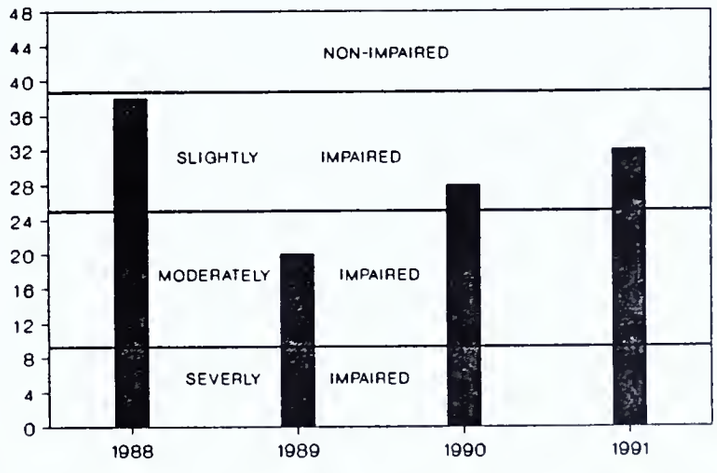


TABLE 34. Water Quality Summary Susquehanna River at Conowingo, Md.

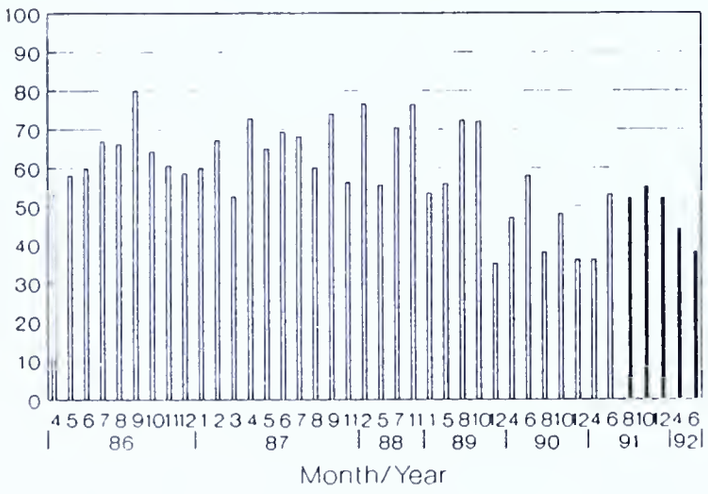
Parameters Exceeding Standards				
Parameter	Date	Value	Standard	State
None				

Date	WQ Index	Parameters Exceeding 90th Percentile		
07/31/91	52	DNO2	TNO2	TSO4
10/08/91	55	DNO2	TNO2	TSO4
12/09/91	52			
04/21/92	44	TMn	DMn	
06/16/92	38			

Biological Summary

Number of taxa: None
Diversity index:
RBP score:
RBP condition:

Water Quality Index



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APPENDIX A. WATER QUALITY DATA FOR INTERSTATE STREAMS CROSSING THE NEW YORK-PENNSYLVANIA AND PENNSYLVANIA-MARYLAND BORDERS

TABLE A-1. Water Quality Data for Interstate Streams Crossing the New York-Pennsylvania Border

Station	Date	Time	Discharge	Temperature	Specific Conductance	Dissolved Oxygen	Biological Oxygen Demand	pH	Alkalinity	Acidity	Solids Dissolved	Solids Total	Ammonia Dissolved	Ammonia Total	Nitrite Dissolved	Nitrite Total	Nitrate Dissolved	Nitrate Total
			cfs	Celsius	umhos/cm	mg/l	mg/l		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
SUSQ 365.0	07/22/91	14:30	244.0	27.0	225	9.6	0.6	8.35	76	0	132	136	0.040	0.090	0.008	0.008	0.30	0.30
SUSQ 365.0	09/16/91	11:30	202.0	22.2	250	8.7	0.8	7.40	76	6	130	156	0.020	0.030	0.008	0.008	0.41	0.41
SUSQ 365.0	11/04/91	12:00	501.0	8.3	215	13.1	1.2	8.45	80	0	114	126	0.020	0.030	0.004	0.004	0.33	0.33
SUSQ 365.0	03/16/92	12:00	4770.0	0.6	162	13.9	0.4	7.80	88	6	44	66	0.040	0.040	0.008	0.008	0.83	0.83
SUSQ 365.0	05/18/92	12:00	2708.0	15.4	177	9.2	0.6	7.90	54	2	98	110	0.030	0.050	0.012	0.012	0.80	0.60
TROW 1.8	07/22/91	13:00	0.1	23.5	90	9.0	1.2	7.50	36	4	52	52	0.030	0.040	0.004	0.004	0.31	0.31
SNAK 2.3	07/22/91	11:00	0.4	23.5	118	8.7	0.4	7.20	26	4	52	58	0.050	0.060	0.004	0.004	0.15	0.15
LSNK 7.6	07/23/91	07:30	0.5	21.8	170	6.2	2.0	7.21	40	4	86	88	0.050	0.050	0.004	0.004	0.13	0.13
SUSQ 340.0	07/22/91	12:30	312.0	27.6	220	9.7	1.2	8.40	66	0	126	130	0.040	0.100	0.004	0.004	0.13	0.13
SUSQ 340.0	09/16/91	10:30	245.0	22.4	208	8.4	0.8	7.30	66	4	126	152	0.020	0.060	0.006	0.008	0.12	0.12
SUSQ 340.0	11/04/91	10:00	478.0	8.4	195	12.6	1.2	8.10	59	2	128	142	0.030	0.030	0.004	0.004	0.29	0.29
SUSQ 340.0	03/16/92	11:00	5530.0	1.0	154	13.1	0.8	7.50	48	8	60	74	0.110	0.120	0.008	0.008	0.81	0.81
SUSQ 340.0	05/18/92	11:00	3170.0	16.4	165	9.4	0.4	7.38	48	4	90	104	0.020	0.060	0.012	0.012	0.58	0.58
CHOC 9.1	07/23/91	09:00	0.3	23.7	115	7.8	1.2	7.40	30	4	68	68	0.050	0.080	0.004	0.004	0.11	0.24
APAL 6.9	07/23/91	10:15	0.2	25.0	105	5.9	2.0	7.19	34	7	52	58	0.050	0.100	0.004	0.004	0.04	0.04
WAPP 2.8	07/23/91	11:45	0.5	25.5	205	11.0	0.8	7.80	42	10	128	128	0.050	0.070	0.008	0.008	1.07	1.07
CAYT 1.7	07/23/91	13:15	6.7	26.9	825	11.8	1.6	7.02	98	43	422	422	0.060	0.090	0.024	0.024	3.02	3.28
CAYT 1.7	09/16/91	14:30	2.5	25.1	1165	12.6	3.6	7.90	90	8	792	822	0.020	0.160	0.052	0.062	6.48	6.67
CAYT 1.7	11/04/91	14:15	6.0	7.9	650	15.2	1.2	8.30	160	0	478	494	0.030	0.050	0.018	0.018	4.34	4.34
CAYT 1.7	03/16/92	14:30	110.0	2.2	220	14.2	0.8	7.35	54	8	122	132	0.130	0.014	0.006	0.006	0.81	0.81
CAYT 1.7	05/18/92	15:00	113.0	17.5	285	8.6	0.5	6.31	66	0	133	140	0.020	0.090	0.018	0.026	0.82	0.83
NFCR 7.6	07/24/91	14:30	0.1	23.6	168	10.8	0.4	8.01	48	1	108	116	0.020	0.050	0.006	0.006	0.22	0.22
TRUP 4.5	07/25/91	10:00	0.7	20.8	340	10.4	0.8	6.30	84	0	198	204	0.030	0.030	0.004	0.004	0.20	0.20
TRUP 4.5	09/18/91	08:30	0.5	24.9	340	9.2	1.2	8.10	100	2	180	190	0.020	0.030	0.004	0.004	0.04	0.04
TRUP 4.5	11/05/91	11:00	4.0	0.9	325	15.8	0.8	7.95	112	4	218	228	0.030	0.040	0.004	0.004	0.04	0.04
TRUP 4.5	03/17/92	12:00	12.3	0.5	165	14.6	0.4	6.90	36	6	75	84	0.040	0.070	0.006	0.006	1.20	1.20
TRUP 4.5	05/19/91	15:00	25.0	20.2	168	12.6	0.8	9.20	54	0	97	104	0.020	0.050	0.008	0.008	0.04	0.32
COWN 2.2	07/25/91	08:30	13.0	11.6	185	9.6	0.8	7.32	54	3	114	126	0.040	0.040	0.006	0.010	0.59	0.59
COWN 2.2	09/17/91	12:45	91.0	14.8	180	10.2	1.2	7.10	54	8	778	800	0.200	0.220	0.018	0.018	0.11	0.11
COWN 2.2	11/05/91	10:00	15.0	10.4	197	13.1	1.6	6.20	58	4	108	122	0.080	0.080	0.012	0.012	0.21	0.21
COWN 2.2	03/17/92	10:00	381.0	1.8	219	12.6	0.8	7.00	44	8	31	40	0.080	0.090	0.016	0.018	0.95	0.95
COWN 2.2	05/19/92	14:00	328.0	17.4	150	10.4	1.2	7.90	36	3	87	94	0.090	0.090	0.012	0.012	0.85	0.65
TIOG 10.8	07/23/91	16:30	59.0	27.0	230	8.7	1.0	7.65	32	3	154	154	0.070	0.070	0.008	0.008	0.44	0.63
TIOG 10.8	09/17/91	11:30	112.0	18.6	220	8.9	1.2	6.70	46	12	150	170	0.040	0.040	0.018	0.018	0.29	0.31
TIOG 10.8	11/05/91	08:30	46.0	7.9	250	14.7	4.4	8.30	38	0	204	216	0.050	0.060	0.004	0.008	0.38	0.38
TIOG 10.8	03/17/92	09:30	781.0	1.4	192	11.8	0.5	6.80	36	12	80	88	0.080	0.080	0.012	0.012	0.93	0.93
TIOG 10.8	05/19/92	12:30	492.0	16.1	158	9.8	1.2	7.70	26	6	112	122	0.040	0.050	0.010	0.010	0.50	0.50
SEEL 10.3	07/24/91	12:00	0.1	19.0	320	10.2	1.2	6.72	88	44	214	214	0.050	0.060	0.004	0.004	0.24	0.24
SOUT 2.8	07/24/91	11:00	0.2	19.4	230	8.4	2.0	6.31	52	31	154	156	0.060	0.080	0.006	0.006	0.13	0.13
BNTY 0.9	07/24/91	10:00	1.1	19.1	320	9.1	0.8	6.55	72	40	164	164	0.050	0.050	0.004	0.004	0.26	0.26
CHEM 12.0	07/24/91	09:00	178.8	22.8	450	10.4	5.6	7.65	65	20	288	304	0.040	0.050	0.010	0.010	0.14	0.14
CHEM 12.0	09/17/91	10:15	233.4	23.2	575	6.6	2.0	7.30	110	6	364	396	0.030	0.050	0.018	0.018	0.71	0.82
CHEM 12.0	11/04/91	15:15	159.0	7.6	470	12.5	1.2	8.30	128	0	318	334	0.020	0.030	0.012	0.012	1.11	1.11
CHEM 12.0	03/16/92	15:00	2940.0	1.7	240	14.5	0.8	6.30	54	10	124	132	0.060	0.060	0.012	0.012	1.02	1.04
CHEM 12.0	05/19/92	10:30	1970.0	16.7	305	9.2	2.0	8.20	78	2	189	202	0.030	0.090	0.022	0.022	1.01	1.01
SUSQ 289.1	07/23/91	12:30	686.0	28.0	300	10.2	4.4	7.50	88	16	158	166	0.050	0.050	0.004	0.004	0.04	0.04
SUSQ 289.1	09/18/91	13:30	428.2	24.4	370	10.8	2.0	8.30	92	0	212	242	0.020	0.050	0.008	0.008	0.17	0.17
SUSQ 289.1	11/04/91	13:30	1390.0	8.2	265	12.9	1.6	8.35	92	0	150	162	0.030	0.030	0.020	0.020	0.57	0.57
SUSQ 289.1	03/18/92	14:00	11440.0	0.9	162	15.0	1.2	7.80	52	4	83	102	0.040	0.050	0.010	0.010	0.89	0.89
SUSQ 289.1	05/18/92	14:00	6570.0	16.9	210	9.2	1.2	8.11	62	1	118	132	0.020	0.050	0.020	0.020	0.71	0.71

TABLE A-1. Water Quality Data for Interstate Streams Crossing the New York-Pennsylvania Border (Continued)

Station	Date	Time	Kjeldahl Nitrogen Dissolved mg/l	Kjeldahl Nitrogen Total mg/l	Ortho Phosphorus Dissolved mg/l	Ortho Phosphorus Total mg/l	Total Organic Carbon mg/l	Magnesium mg/l	Chloride mg/l	Sulfate mg/l	Turbidity NTU	Iron Dissolved ug/l	Iron Total ug/l	Manganese Dissolved ug/l	Manganese Total ug/l	Aluminum Dissolved ug/l	Aluminum Total ug/l
	07/22/91	14:30	0.25	0.55	0.002	0.011	2.7	3.44	13	23	1.4	14	72	10	33	135	135
SUSO 365.0	09/16/91	11:30	0.60	0.60	0.002	0.009	2.2	4.33	14	28	1.0	10	78	10	10	135	135
SUSO 385.0	11/04/91	12:00	0.20	0.20	0.002	0.002	2.8	3.70	11	28	2.1	24	280	10	20	135	135
SUSO 385.0	03/16/92	12:00	0.20	0.20	0.004	0.012	2.1	2.18	7	27	8.0	127	387	19	35	135	155
SUSQ 385.0	05/18/92	12:00	0.21	0.28	0.004	0.013	2.4	2.98	8	14	3.3	77	289	17	44	135	135
TROW 1.8	07/22/91	13:00	0.23	0.41	0.002	0.002	1.9	2.48	8	22	1.0	11	28	10	10	135	135
SNAK 2.3	07/22/91	11:00	0.20	0.20	0.002	0.004	1.8	2.78	10	25	1.0	17	97	17	22	135	135
LSNK 7.8	07/23/91	07:30	0.39	0.41	0.002	0.005	4.5	2.79	18	14	2.5	243	501	58	189	135	135
SUSO 340.0	07/22/91	12:30	0.33	0.33	0.002	0.009	2.6	3.55	14	25	1.1	10	68	10	34	135	135
SUSO 340.0	09/16/91	10:30	0.57	0.67	0.002	0.011	2.5	4.17	14	25	1.0	10	141	12	81	135	135
SUSQ 340.0	11/04/91	10:00	0.20	0.20	0.003	0.003	2.7	3.69	11	31	2.5	33	406	10	24	135	135
SUSQ 340.0	03/18/92	11:00	0.20	0.20	0.005	0.015	2.2	2.07	8	22	8.8	97	383	19	29	135	159
SUSQ 340.0	05/18/92	11:00	0.20	0.33	0.003	0.016	2.4	2.90	8	18	3.2	51	254	33	50	135	135
CHOC 9.1	07/23/91	09:00	0.33	0.35	0.002	0.002	2.5	3.84	11	19	1.7	71	883	35	197	135	135
APAL 8.9	07/23/91	10:15	0.29	0.49	0.002	0.018	3.4	2.89	8	17	3.4	117	560	240	309	135	152
WAPP 2.6	07/23/91	11:45	0.20	0.27	0.002	0.002	2.0	5.39	11	24	1.0	33	54	10	10	135	135
CAYT 1.7	07/23/91	13:15	0.66	0.86	0.463	0.550	4.9	9.65	106	80	1.5	45	99	23	31	205	244
CAYT 1.7	09/18/91	14:30	1.52	2.06	1.140	1.500	5.7	11.50	153	184	1.0	101	63	25	33	135	135
CAYT 1.7	11/04/91	14:15	0.49	0.59	0.840	0.840	3.0	10.00	100	84	1.0	18	22	10	10	135	135
CAYT 1.7	03/18/92	14:30	0.20	0.20	0.028	0.032	2.1	4.30	18	33	1.9	103	188	14	17	135	135
CAYT 1.7	05/18/92	15:00	0.36	0.41	0.095	0.110	2.7	5.45	28	24	1.0	52	175	10	14	135	135
NFCR 7.6	07/24/91	14:30	0.40	0.42	0.043	0.053	3.5	5.51	8	21	1.0	34	178	33	55	49	617
TRUP 4.5	07/25/91	10:00	0.26	0.28	0.002	0.002	2.5	8.01	21	29	1.2	13	55	10	10	21	52
TRUP 4.5	09/18/91	08:30	0.20	0.24	0.002	0.010	3.0	4.45	27	32	5.0	24	142	12	14	135	214
TRUP 4.5	11/05/91	11:00	0.20	0.20	0.002	0.002	1.9	9.58	28	35	1.0	10	29	10	10	135	135
TRUP 4.5	03/17/92	12:00	0.20	0.20	0.005	0.008	2.8	4.19	12	33	8.5	80	184	15	15	135	137
TRUP 4.5	05/19/91	15:00	0.31	0.40	0.003	0.009	3.8	N/A	8	23	2.1	32	182	10	N/A	135	135
COWN 2.2	07/25/91	08:30	0.26	0.28	0.002	0.002	3.0	4.67	8	25	5.0	19	103	45	272	58	77
COWN 2.2	09/17/91	12:45	0.38	0.43	0.009	0.013	3.0	4.20	8	26	1.0	88	292	799	912	135	135
COWN 2.2	11/05/91	10:00	0.44	0.44	0.002	0.003	4.1	4.84	13	25	3.8	40	289	180	219	135	135
COWN 2.2	03/17/92	10:00	0.20	0.24	0.004	0.008	2.9	4.48	15	38	1.0	10	143	71	117	135	135
COWN 2.2	05/19/92	14:00	0.48	0.56	0.002	0.008	3.7	3.52	8	23	2.0	21	81	22	41	135	135
TIOG 10.8	07/23/91	16:30	0.20	0.38	0.002	0.010	3.3	6.64	9	61	1.2	45	97	43	92	225	249
TIOG 10.8	09/17/91	11:30	0.20	0.20	0.005	0.011	2.6	6.16	9	46	1.0	53	142	230	280	135	135
TIOG 10.8	11/05/91	08:30	0.60	0.95	0.002	0.006	5.3	8.73	18	77	2.1	17	142	133	183	135	135
TIOG 10.8	03/17/92	09:30	0.20	0.20	0.005	0.011	2.5	4.28	11	42	1.1	81	211	287	338	135	135
TIOG 10.8	05/19/92	12:30	0.27	0.63	0.002	0.004	3.0	4.48	8	37	2.0	41	112	217	248	135	135
SEEL 10.3	07/24/91	12:00	0.28	0.28	0.002	0.002	2.0	7.11	12	25	1.0	21	25	12	12	135	135
SOUT 2.8	07/24/91	11:00	0.48	0.64	0.006	0.020	7.1	5.29	17	10	3.0	555	400	127	176	164	147
BNTY 0.9	07/24/91	10:00	0.20	0.20	0.002	0.002	2.2	8.11	25	26	1.0	41	49	13	15	237	239
CHEM 12.0	07/24/91	09:00	0.50	1.39	0.002	0.014	5.5	11.60	50	38	8.3	48	253	15	281	254	377
CHEM 12.0	09/17/91	10:15	0.23	0.51	0.095	0.104	3.2	12.60	83	52	1.0	10	119	10	100	135	135
CHEM 12.0	11/04/91	15:15	0.20	0.32	0.110	0.110	2.9	13.80	59	47	2.3	15	92	12	31	135	135
CHEM 12.0	03/16/92	15:00	0.20	0.21	0.011	0.021	2.5	5.08	19	37	3.5	54	185	84	94	135	135
CHEM 12.0	05/19/92	10:30	0.48	1.07	0.017	0.036	3.6	7.45	25	28	3.2	24	208	14	43	135	140
SUSQ 289.1	07/23/91	12:30	0.52	0.84	0.002	0.005	4.8	5.97	27	26	5.0	22	116	10	74	135	135
SUSQ 289.1	09/18/91	13:30	0.70	1.09	0.007	0.017	3.6	7.45	37	33	7.0	10	192	10	88	135	135
SUSO 289.1	11/04/91	13:30	0.20	0.21	0.013	0.018	3.3	5.38	21	26	2.0	28	112	10	19	135	135
SUSO 289.1	03/18/92	14:00	0.21	0.21	0.007	0.018	2.3	2.84	11	27	8.0	107	462	18	29	135	176
SUSO 289.1	05/18/92	14:00	0.24	0.32	0.009	0.019	2.5	4.15	12	20	2.2	207	207	41	41	135	135

TABLE A-2. Water Quality Data for Interstate Streams Crossing the Pennsylvania-Maryland Border

Station	Date	Time	Discharge cfs	Temperature Celsius	Specific Conductance umhos/cm	Dissolved Oxygen mg/l	Biological Oxygen Demand mg/l	pH	Alkalinity mg/l	Acidity mg/l	Solids Dissolved mg/l	Solids Total mg/l	Ammonia Dissolved mg/l	Ammonia Total mg/l	Nitrite Dissolved mg/l	Nitrite Total mg/l	Nitrate Dissolved mg/l	Nitrate Total mg/l
SBCC 20 4	07/29/91	11 00	0 8	17 8	100	9.0	0 4	6 62	30	4	62	90	0 030	0 030	0 006	0 006	1 00	1 00
LNGA 2 5	07/29/91	10 00	0 6	17 9	160	8 7	1 2	7.21	30	5	132	156	0 060	0 060	0 016	0 016	4 58	4 58
SUSQ 44 5	08/05/91	10 30	4130 0	25 2	435	8 2	1.2	8 20	54	2	274	284	0 030	0 040	0 008	0 008	0 47	0 47
SUSQ 44 5	10/09/91	12 45	5690.0	17 8	410	10 4	1 6	8 30	60	0	272	282	0 030	0 030	0 010	0 010	0 74	0 74
SUSQ 44 5	12/11/91	11 30	27100 0	6 0	241	11 6	2 0	7.50	38	2	150	152	0 110	0 110	0 012	0 014	1 73	1 73
SUSQ 44 5	04/22/92	11.00	86500 0	10 9	142	11 4	1 6	7.80	32	4	90	122	0 040	0 040	0 022	0 026	0 75	0 76
SUSQ 44 5	06/18/92	10 30	12900 0	23 5	225	8 6	3 0	8 50	40	0	169	182	0 020	0 020	0 006	0 008	0 57	0 57
SCTT 3 0	07/31/91	10.00	0.1	19 2	295	7.5	1.2	6 08	54	49	216	230	0 210	0 210	0 058	0 064	2 01	2 03
SCTT 3 0	10/17/91	12 30	0 1	13 7	335	7 4	3 5	7.45	146	12	230	270	1 180	1 240	0 040	0 040	1 39	1 39
SCTT 3 0	12/19/91	12 30	0 4	8 5	414	14 1	0 5	7.19	60	6	254	270	0 590	0 590	0 042	0 042	3 00	3 00
SCTT 3 0	04/20/92	12 00	0.7	9 2	280	10 6	2 4	6.80	36	6	152	156	0 230	0 230	0 054	0 058	3 82	3 82
SCTT 3 0	06/16/92	11 30	0 4	16 8	278	5 8	2 5	6.90	72	8	111	142	1.500	1 680	0 118	0 124	0 87	0 91
CNWG 4 4	08/05/91	13 30	11.3	23 4	203	8.7	0 6	7.90	36	4	144	162	0 070	0 070	0 036	0 036	6 60	6 60
CNWG 4 4	10/18/91	12 30	5 1	11 0	190	10 1	1 2	7.10	30	2	152	152	0 040	0 040	0 024	0 024	6 76	6 78
CNWG 4 4	12/10/91	11 30	20 7	7 0	244	9 5	4 5	7.12	40	3	146	264	0 860	0 660	0 050	0 060	5 27	5 26
CNWG 4 4	04/21/92	12 15	22 8	12 4	210	11.2	0 8	7 52	32	4	142	150	0 040	0 040	0 034	0 032	7 49	7 49
CNWG 4 4	06/17/92	12 15	18 6	20 7	204	7 9	0 8	7.28	16	2	95	140	0 020	0 060	0 032	0 032	7 23	7 23
OCTO 6 6	07/31/91	12.30	91.5	23 5	200	10 1	0 4	8 31	41	0	132	134	0 070	0 070	0 020	0 020	3 85	3 85
OCTO 6 6	10/18/91	11 00	31.9	12 6	210	11.4	0 8	8 00	40	2	146	146	0 020	0 030	0 010	0 012	3 55	3 55
OCTO 6 6	12/10/91	10.30	184 0	6 6	233	11 2	2 0	7.05	43	2	142	194	0 150	0 150	0 024	0 028	4 58	5 05
OCTO 6 6	04/21/92	11 00	42.1	12 5	215	11 2	0 8	8 00	40	2	138	146	0 030	0 040	0 018	0 014	5 26	5 26
OCTO 6 6	06/17/92	11 15	39 8	21 9	217	9 5	0 8	8 20	45	2	168	174	0 020	0 030	0 016	0 016	4 34	4 34
EBAU 1 5	07/30/91	09 30	3 6	18 0	165	6 9	0 4	7.30	26	4	114	128	0 040	0 040	0 006	0 006	4 84	4 84
EBAU 1 5	10/07/91	11.00	4 1	11 0	385	10 5	1 2	7.35	66	4	306	320	0 020	0 020	0 008	0 008	5 56	5 80
EBAU 1 5	12/09/91	11 30	5 8	8 0	375	14.2	0 5	7.20	24	4	228	244	0 070	0 070	0 014	0 014	6 19	6 19
EBAU 1 5	04/20/92	10 00	6 1	9 0	435	10 0	1 8	6 30	14	10	261	266	0 080	0 080	0 040	0 040	6 25	6 25
EBAU 1 5	06/16/92	10 30	6 4	16 3	367	9 5	0 8	7 20	20	4	167	210	0 040	0 050	0 050	0 060	6 00	6 00
DEER 44 2	07/29/91	12 45	5 6	18 9	145	9 4	0 8	7.48	34	4	106	112	0 030	0 030	0 010	0 010	3 38	3 62
DEER 44 2	10/07/91	09 30	7 0	10 9	155	10 8	0 8	7.40	148	2	118	138	0 030	0 030	0 010	0 010	3 18	3 18
DEER 44 2	12/09/91	10 30	11.9	10 0	189	13 6	0 5	7.65	26	2	102	134	0 040	0 040	0 010	0 010	4 87	4 87
DEER 44 2	04/20/92	09 00	11 3	10 2	168	10 2	1 6	6 60	26	6	96	100	0 020	0 040	0 012	0 012	5 07	5 07
DEER 44 2	06/16/92	09 30	10 9	16 9	171	9 6	0 4	7 60	28	2	64	76	0 090	0 090	0 014	0 014	4 83	4 83
BBDC 4 1	07/30/91	10 45	1 2	18 3	110	9 8	0 4	6 96	16	4	82	92	0 040	0 040	0 004	0 004	4 84	4 84
FBDC 4 1	07/30/91	11 30	1 0	19 1	122	9 5	0 8	7.10	20	4	80	94	0 040	0 040	0 008	0 008	3 62	3 62
SUSQ 10 0	07/31/91	11 30	6396 0	28 0	380	6 2	0 8	7 40	28	4	250	280	0 100	0 100	0 162	0 176	1 09	1 08
SUSQ 10 0	10/08/91	10 30	4454 0	19 3	390	6 0	1 8	7.50	54	6	260	262	0 060	0 080	0 126	0 130	1 17	1 17
SUSQ 10 0	12/09/91	14 30	23700 0	6 0	273	15 8	0 5	7 50	42	2	160	182	0 130	0 150	0 016	0 016	1 76	1 78
SUSQ 10 0	04/21/92	10 00	82900 0	11 6	205	11 2	0 6	7 15	36	4	140	158	0 090	0 100	0 016	0 014	1 17	1 17
SUSQ 10 0	06/16/92	13 00	46700 0	25 4	169	7 9	1 2	7 50	34	4	75	100	0 080	0 080	0 022	0 022	0 95	0 95

TABLE A-2. Water Quality Data for Interstate Streams Crossing the Pennsylvania-Maryland Border (Continued)

Station	Date	Time	Kjeldahl Nitrogen Dissolved	Kjeldahl Nitrogen Total	Ortho Phosphorus Dissolved	Ortho Phosphorus Total	Total Organic Carbon	Magnesium	Chloride	Sulfate	Turbidity	Iron Dissolved	Iron Total	Manganese Dissolved	Manganese Total	Aluminum Dissolved	Aluminum Total
			mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SBCC 20.4	07/29/91	11:00	0.34	0.34	0.002	0.006	3.3	3.00	6	24	10.2	101	924	29	61	135	837
LNGA 2.5	07/29/91	10:00	0.52	0.52	0.002	0.013	3.0	5.47	13	36	8.0	61	521	85	111	135	410
SUSQ 44.5	08/05/91	10:30	0.43	0.64	0.002	0.007	4.0	14.30	33	94	4.4	100	219	50	121	150	202
SUSQ 44.5	10/09/91	12:45	0.19	0.34	0.005	0.009	3.3	14.20	31	92	4.0	100	196	50	61	150	152
SUSQ 44.5	12/11/91	11:30	0.20	0.30	0.014	0.028	3.4	8.16	13	44	1.0	100	783	72	162	150	341
SUSQ 44.5	04/22/92	11:00	0.33	0.43	0.002		3.0	3.54	10	27	7.3	100	1570	50	163	150	150
SUSQ 44.5	06/18/92	10:30	0.22	0.52	0.005	0.011	3.5	6.78	13	42	8.0	100	236	50	114	150	244
SCTT 3.0	07/31/91	10:00	0.47	0.55	0.077	0.102	2.1	12.70	24	18	1.0	54	1630	110	187	135	135
SCTT 3.0	10/17/91	12:30	2.06	2.40	0.033		5.1	14.30	34	27	19.0	252	4940	1050	1190	135	369
SCTT 3.0	12/19/91	12:30	0.84	0.90	0.048	0.064	3.4	15.00	41	39	2.4	144	335	157	159	135	135
SCTT 3.0	04/20/92	12:00	0.30	0.53	0.036	0.040	2.3	10.70	38	24	1.4	45	157	37	42	135	135
SCTT 3.0	06/16/92	11:30	1.70	2.02	0.008	0.052	3.6	12.20	29	24	6.3	211	645	1030	1240	135	159
CNWG 4.4	08/05/91	13:30	0.68	0.86	0.021	0.027	3.1	8.31	17	20	8.4	75	571	52	80	51	298
CNWG 4.4	10/18/91	12:30	0.37	0.37	0.020	0.042	2.3	8.31	17	10	4.0	53	216	29	40	135	135
CNWG 4.4	12/10/91	11:30	2.21	2.75	0.268	0.356	13.8	10.50	15	28	1.0	127	1730	59	207	135	815
CNWG 4.4	04/21/92	12:15	0.32	0.34	0.009	0.015	1.9	8.53	16	13	2.9	51	208	31	33	135	135
CNWG 4.4	06/17/92	12:15	0.59	0.68	0.027	0.048	2.7	9.01	16	10	20.0	100	1310	56	95	150	924
OCTO 6.6	07/31/91	12:30	0.37	0.56	0.024	0.027	2.9	6.95	15	16	1.7	47	116	10	10	135	135
OCTO 6.6	10/18/91	11:00	0.22	0.26	0.026	0.026	3.0	9.13	17	26	1.5	31	207	10	19	135	135
OCTO 6.6	12/10/91	10:30	0.56	1.04	0.091	0.117	6.0	10.40	15	32	37.0	107	2130	50	193	150	1210
OCTO 6.6	04/21/92	11:00	0.24	0.40	0.014	0.020	2.5	8.98	15	23	2.9	100	288	50	50	150	150
OCTO 6.6	06/17/92	11:15	0.50	0.60	0.029	0.050	4.2	9.93	14	21	4.0	172	292	50	54	150	215
EBAU 1.5	07/30/91	09:30	0.25	0.27	0.021	0.023	1.5	5.26	21	17	1.0	93	242	23	36	135	135
EBAU 1.5	10/07/91	11:00	0.43	0.43	0.012	0.016	2.0	5.51	97	10	4.0	110	320	52	59	135	180
EBAU 1.5	12/09/91	11:30	0.22	0.32	0.002	0.004	1.4	4.97	64	13	3.0	67	137	48	51	135	135
EBAU 1.5	04/20/92	10:00	0.46	0.49	0.004	0.009	1.2	5.16	92	10	3.7	61	151	52	53	135	135
EBAU 1.5	06/16/92	10:30	0.34	0.44	0.010	0.020	1.2	5.52	70	10	1.0	41	273	67	71	135	148
DEER 44.2	07/29/91	12:45	0.21	0.23	0.002	0.002	2.0	5.48	15	10	2.3	86	276	25	30	135	135
DEER 44.2	10/07/91	09:30	0.34	0.38	0.007	0.015	2.6	5.68	15	10	5.0	109	378	25	27	135	240
DEER 44.2	12/09/91	10:30	0.20	0.20	0.002	0.004	1.4	5.19	15	13	1.0	47	140	22	29	135	135
DEER 44.2	04/20/92	09:00	0.35	0.35	0.004	0.016	1.4	5.27	17	10	2.1	36	119	24	25	135	135
DEER 44.2	06/16/92	09:30	0.20	0.29	0.003	0.004	1.4	5.54	16	10	1.0	67	137	30	30	135	135
BBDC 4.1	07/30/91	10:45	0.25	0.25	0.002	0.002	1.2	4.84	10	10	1.1	94	94	10	10	135	135
FBDC 4.1	07/30/91	11:30	0.23	0.33	0.015	0.015	2.0	4.46	12	10	2.6	215	215	14	21	135	135
SUSQ 10.0	07/31/91	11:30	0.37	0.49	0.002	0.007	2.7	13.00	26	60	5.0	10	270	19	149	135	135
SUSQ 10.0	10/08/91	10:30	0.24	0.44	0.004	0.012	3.2	13.60	32	85	6.5	11	341	15	113	135	135
SUSQ 10.0	12/09/91	14:30	0.22	0.42	0.013	0.027	3.7	6.85	12	43	14.8	98	623	12	56	135	241
SUSQ 10.0	04/21/92	10:00	0.20	0.20	0.009	0.022	2.2	4.96	13	34	6.5	66	584	206	256	135	325
SUSQ 10.0	06/16/92	13:00	0.55	0.55	0.004	0.013	3.1	3.00	11	37	1.0	28	179	54	161	135	135

APPENDIX B. MACROINVERTEBRATE DATA FOR INTERSTATE STREAMS CROSSING THE NEW YORK-PENNSYLVANIA AND PENNSYLVANIA-MARYLAND BORDERS

TABLE B-1. Macroinvertebrate Data for Susquehanna River at Windsor, N.Y.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Gonielmis *	
		Macronychus *	
		Optioservus	3
		Stenelmis	3
	Gyrinidae	Dineutis*	
	Psephenidae	Psephenus	4
Diptera	Rhagionidae	Atherix	2
	Chironomidae		4
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
Ephemeroptera	Baetidae	Baetis *	
		Centroptilum *	
		Neocloeon *	
		Pseudocloeon	10
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella *	
		Serratella	5
	Heptageniidae	Heptagenia *	
		Rhithrogena *	
		Stenacron *	
		Stenonema	1
	Oligoneuriidae	Isonychia	17
	Polymitarcyidae	Ephoron	4
	Potamanthidae	Potamanthus *	
Megaloptera	Corydalidae	Corydalus	1
	Sialidae	Sialis *	
Plecoptera	Perlidae	Acroneuria *	
		Neoperla *	
		Paragnetina	2
		Phasganophora	1
	Perlodidae	Isoperla *	
Trichoptera	Hydropsychidae	Cheumatopsyche *	
		Hydropsyche *	
		Macronemum	29
		Symphitopsyche	17
	Hydroptilidae	Stactobiella *	
	Lepidostomatidae	Theliopsyche *	
	Leptoceridae	Mystacides *	
	Limnephilidae	Frenesia *	
		Neophylax	7
	Philopotamidae	Chimarra	1
	Polycentropodidae	Neureclipsis *	
		Nyctiophylax *	
Amphipoda	Gammaridae	Gammarus *	
Decapoda	Cambaridae	Cambarus *	

TABLE B-1. Macroinvertebrate Data for Susquehanna River at Windsor, N.Y. (Continued)

Order	Family	Genus	Individuals Collected
Limnophila	Physidae	Physa	1
Pelecypoda	Sphaeriidae	Pisidium	1
Tricladida	Planariidae	Dugesia *	

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 47
1991: 19

RBP SCORE: 46
DIVERSITY INDEX: 3.44

TABLE B-2. Macroinvertebrate Data for Trowbridge Creek at Great Bend, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Dytiscidae	Laccophilus	4
	Elmidae	Stenelmis	12
	Psephenidae	Psephenus	22
Diptera	Rhagionidae	Atherix *	
	Chironomidae		10
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
		Hexatoma	2
		Pedicia *	
		Tipula	4
Ephemeroptera	Baetidae	Baetis *	
		Neocloeon *	
	Heptageniidae	Heptagenia *	
		Stenacron *	
		Stenonema	2
	Oligoneuriidae	Isonychia	4
	Potamanthidae	Potamanthus *	
Megaloptera	Corydalidae	Nigronia	10
	Sialidae	Sialis *	
Odonata	Aeshnidae	Boyeria *	
	Gomphidae	Ophiogomphus	2
Plecoptera	Capniidae	Paracapnia *	
	Leuctridae	Leuctra	2
	Perlidae	Paragnetina *	
		Phasganophora	8
Trichoptera	Hydropsychidae	Cheumatopsyche *	
		Potamyia *	
		Symphitopsyche	22
	Philopotamidae	Dolophilodes *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 29
1991: 13

RBP SCORE: 26
DIVERSITY INDEX: 3.22

TABLE B-3. Macroinvertebrate Data for Snake Creek at Brookdale, Pa., 1986-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Macronychus *	
		Optioservus	4
		Stenelmis	4
	Psephenidae	Psephenus	7
Diptera	Rhagionidae	Atherix *	
	Chironomidae		4
	Tipulidae	Antocha *	
		Hexatoma	1
		Tipula *	
Ephemeroptera	Baetidae	Baetis	3
		Centroptilum *	
		Heterocloeon *	
		Neocloeon *	
		Pseudocloeon	2
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella *	
		Serratella *	
	Ephemeridae	Ephemera *	
	Heptageniidae	Epeorus *	
		Heptagenia *	
		Ironodes	3
		Stenacron *	
		Stenonema	1
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia	8
	Polymitarcyidae	Ephoron *	
	Potamanthidae	Potamanthus *	
	Tricorythidae	Tricorythodes *	
Megaloptera	Corydalidae	Corydalus *	
		Chauliodes *	
		Nigronia	1
	Sialidae	Sialis *	
Odonata	Gomphidae	Gomphus	1
		Ophiogomphus	2
Plecoptera	Leuctridae	Leuctra *	
	Nemouridae	Amphinemura *	
	Perlidae	Acroneuria *	
		Neoperla *	
		Paragnetina	6
		Phasganophora	4
	Perlodidae	Isoperla *	
	Pteronarcyidae	Pteronarcys *	
Trichoptera	Glossosomatidae	Glossosoma	2
	Hydropsychidae	Cheumatopsyche	2
		Hydropsyche	18
		Macronemum *	
		Parapsyche *	
		Symphitopsyche	21

TABLE B-3. Macroinvertebrate Data for Snake Creek at Brookdale, Pa., 1986-91 (Continued)

Order	Family	Genus	Individuals Collected
	Hydroptilidae	Leucotrichia *	
	Leptoceridae	Mystacides *	
	Limnephilidae	Hydatophylax	1
	Philopotamidae	Chimarra	18
	Polycentropodidae	Neureclipsis *	
Decapoda	Cambaridae	Cambarus	1
Pelecypoda	Sphaeriidae	Pisidium *	

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 54
1991: 22

RBP SCORE: 48
DIVERSITY INDEX: 3.59

TABLE B-4. Macroinvertebrate Data for Little Snake Creek at Brackney, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus *	
		Stenelmis	2
	Psephenidae	Psephenus	22
Diptera	Rhagionidae	Atherix *	
	Chironomidae		5
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Antocha	1
		Hexatoma	4
		Tipula	1
Ephemeroptera	Baetidae	Neocloeon *	
		Heterocloeon	2
		Pseudocloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella *	
		Eurylophella *	
	Ephemeridae	Ephemera *	
	Heptageniidae	Heptagenia *	
		Stenonema	2
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia	13
Megaloptera	Corydalidae	Nigronia	6
	Sialidae	Sialis	1
Odonata	Aeshnidae	Boyeria	2
	Gomphidae	Gomphus *	
		Hagenius *	
		Ophiogomphus *	
Plecoptera	Perlidae	Acroneuria	1
		Paragnetina *	
		Phasganophora *	
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	2
		Hydropsyche *	
		Macronemum	11
		Symphitopsyche	19
	Philopotamidae	Chimarra	2
Decapoda	Cambaridae	Cambarus	2

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 37
1991: 18

RBP SCORE: 38
DIVERSITY INDEX: 3.47

TABLE B-5. Macroinvertebrate Data for Susquehanna River at Kirkwood, N.Y.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Ancyronyx *	
		Dubiraphia *	
		Macronychus *	
		Optioservus	6
		Stenelmis	7
	Hydrophilidae	Berosus	2
	Psephenidae	Psephenus	8
	Ptilodactylidae	Anchytarsus *	
Diptera	Rhagionidae	Atherix *	
	Chironomidae		6
	Tipulidae	Antocha *	
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Centroptilum *	
		Pseudocloeon *	
	Caenidae	Brachycercus	5
	Ephemerellidae	Serratella *	
	Heptageniidae	Heptagenia *	
		Stenacron	1
		Stenonema	8
	Leptophlebiidae	Paraleptophlebia	1
	Oligoneuriidae	Isonychia *	
	Polymitarcyidae	Ephoron	25
	Potamanthidae	Potamanthus	10
	Tricorythidae	Tricorythodes *	
Lepidoptera	Pyralidae	Petrophila *	
Megaloptera	Corydalidae	Corydalus *	
Odonata	Coenagrionidae	Argia *	
Plecoptera	Perlidae	Neoperla	3
		Phasganophora	1
Trichoptera	Brachycentridae	Brachycentrus	1
	Glossosomatidae	Glossosoma *	
	Helicopsychidae	Helicopsyche *	
	Hydropsychidae	Cheumatopsyche	5
		Hydropsyche *	
		Macronemum	1
		Symphitopsyche	3
	Hydroptilidae	Stactobiella *	
	Lepidostomatidae	Lepidostoma *	
		Theliopsyche *	
	Leptoceridae	Ceraclea	2
	Limnephilidae	Hydatophylax	2
		Neophylax	8
		Pycnopsyche *	
	Philopotamidae	Chimarra*	
	Polycentropodidae	Neureclipsis	1
Hydracarina			1

TABLE B-5. Macroinvertebrate Data for Susquehanna River at Kirkwood, N.Y. (Continued)

Order	Family	Genus	Individuals Collected
Amphipoda	Gammaridae	Gammarus *	
Decapoda	Cambaridae	Cambarus *	
		Orconectes *	
Pelecypoda	Sphaeriidae	Musculium *	
		Pisidium	1
Haplotaxida	Naididae *		
Tricladida	Planariidae	Dugesia*	

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 54
1991: 23

RBP SCORE: 44
DIVERSITY INDEX: 3.88

TABLE B-6. Macroinvertebrate Data for Choconut Creek at Vestal Center, N.Y., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	4
		Stenelmis	3
	Gyrinidae	Dineutis *	
	Psephenidae	Psephenus	7
Diptera	Rhagionidae	Atherix	2
	Chironomidae		4
	Empididae	Hemerodromia *	
	Tipulidae	Antocha *	
		Hexatoma *	
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Pseudocloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella *	
		Serratella	1
	Heptageniidae	Epeorus	3
		Heptagenia *	
		Stenonema	8
	Leptophlebiidae	Leptophlebia	1
	Oligoneuriidae	Isonychia	17
Megaloptera	Corydalidae	Nigronia *	
	Sialidae	Sialis	1
Odonata	Gomphidae	Gomphus	3
		Ophiogomphus	1
Plecoptera	Leuctridae	Leuctra *	
	Perlidae	Acroneuria *	
		Phasganophora *	
	Perlodidae	Isoperla *	
Trichoptera	Glossosomatidae	Glossosoma	1
	Hydropsychidae	Cheumatopsyche	8
		Hydropsyche	15
		Symphitopsyche	17
	Limnephilidae	Hydatophylax	2
	Philopotamidae	Chimarra	5
		Dolophilodes *	
	Polycentropodidae	Neureclipsis *	
Decapoda	Cambaridae	Orconectes	1

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 35
1991: 20

RBP SCORE: 46
DIVERSITY INDEX: 3.71

TABLE B-7. Macroinvertebrate Data for Apalachin Creek at Little Meadows, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Ordobrevia *	
		Optioservus	3
		Stenelmis	9
	Hydrophilidae	Laccobius *	
	Psephenidae	Psephenus	7
Diptera	Chironomidae		5
	Simuliidae	Simulium *	
	Tipulidae	Hexatoma	3
		Tipula	1
Ephemeroptera	Baetidae	Baetis	1
		Centroptilum *	
	Caenidae	Caenis *	
	Ephemerellidae	Serratella *	
	Heptageniidae	Heptagenia *	
		Stenacron *	
		Stenonema	4
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia	1
Megaloptera	Corydalidae	Corydalus *	
		Nigronia *	
	Sialidae	Sialis	2
Odonata	Gomphidae	Gomphus *	
		Ophiogomphus	7
Plecoptera	Leuctridae	Leuctra *	
	Perlidae	Acroneuria *	
		Paragnetina	1
		Phasgonaphora	2
	Perlodidae	Isoperla *	
Trichoptera	Glossosomatidae	Glossosoma	4
	Hydropsychidae	Cheumatopsyche	22
		Hydropsyche	14
		Symphitopsyche	7
	Philopotamidae	Chimarra	6
		Dolophilodes *	
Decapoda	Cambaridae	Cambarus *	
		Orconectes *	
Hemiptera	Gerridae	Gerris	1
Pelecypoda	Sphaeriidae	Musculium *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 39
1991: 19

RBP SCORE: 40
DIVERSITY INDEX: 3.69

TABLE B-8. Macroinvertebrate Data for Wappasening Creek at Nichols, N.Y., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	6
		Stenelmis	2
	Gyrinidae	Dineutis *	
	Psephenidae	Ectopria *	
		Psephenus	9
Diptera	Rhagionidae	Atherix	1
	Chironomidae		5
	Empididae	Hemerodromia *	
	Tipulidae	Antocha	2
		Hexatoma *	
		Limonia *	
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella	6
	Ephemeridae	Ephemera *	
	Heptageniidae	Epeorus *	
		Heptagenia	1
		Stenacron	2
		Stenonema	4
	Leptophlebiidae	Leptophlebia	1
	Oligoneuriidae	Isonychia	12
	Tricorythidae	Tricorythodes *	
Megaloptera	Corydalidae	Corydalus *	
		Nigronia *	
	Sialidae	Sialis	1
Odonata	Coenagrionidae	Argia *	
	Gomphidae	Gomphus	1
		Hagenius *	
		Ophiogomphus *	
		Stylogomphus *	
Plecoptera	Perlidae	Acroneuria	1
		Neoperla	1
		Paragnetina *	
		Phasganophora *	
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	11
		Hydropsyche	15
		Symphitopsyche	24
	Hydroptilidae	Stactobiella *	
	Philopotamidae	Chimarra	1
	Polycentropodidae	Neureclipsis *	
Decapoda	Cambaridae	Orconectes *	
Limnophila	Physidae	Physa *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 43
1991: 20

RBP SCORE: 44
DIVERSITY INDEX: 3.57

TABLE B-9. Macroinvertebrate Data for Cayuta Creek at Waverly, N.Y.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	2
		Stenelmis	2
	Psephenidae	Psephenus	5
Diptera	Rhagionidae	Atherix *	
	Chironomidae		9
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
		Hexatoma	1
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Centroptilum *	
		Heterocloeon *	
		Pseudocloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella *	
		Serratella	11
	Heptageniidae	Epeorus	1
		Heptagenia *	
		Stenacron *	
		Stenonema	8
	Oligoneuriidae	Isonychia	13
	Polymitarcyidae	Ephoron *	
	Tricorythidae	Tricorythodes *	
Lepidoptera	Pyralidae	Petrophila *	
Megaloptera	Corydalidae	Corydalus	1
	Sialidae	Sialis	1
Plecoptera	Perlidae	Acroneuria	3
		Paragnetina *	
		Phasganophora	1
	Perlodidae	Isoperla *	
		Cultus *	
Trichoptera	Brachycentridae	Brachycentrus *	
	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	1
		Hydropsyche	38
		Macronemum	5
		Symphitopsyche	6
	Hydroptilidae	Leucotrichia *	
		Stactobiella *	
	Limnephilidae	Pycnopsyche *	
	Philopotamidae	Chimarra *	
	Polycentropodidae	Nyctiophylax *	
Decapoda	Cambaridae	Orconectes *	
Hydracarina *			
Isopoda	Asellidae	Asellus*	
Limnophila	Physidae	Physa *	
Tricladida	Planariidae	Dugesia	1

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 47
1991: 18

RBP SCORE: 34
DIVERSITY INDEX: 3.23

TABLE B-10. Macroinvertebrate Data for North Fork Cowanesque River at North Fork, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	5
		Stenelmis	3
	Gyrinidae	Dineutis *	
	Hydrophilidae	Laccobius *	
	Psephenidae	Psephenus	18
Diptera	Rhagionidae	Atherix	1
	Chironomidae		6
	Empididae	Hemerodromia *	
	Tabanidae	Chrysops *	
	Tipulidae	Antocha	1
		Hexatoma	2
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Neocloeon *	
		Pseudocloeon	5
	Caenidae	Caenis	1
	Ephemeridae	Ephemera *	
	Heptageniidae	Epeorus *	
		Heptagenia	9
		Ironodes *	
		Stenacron *	
		Stenonema	5
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia	2
	Tricorythidae	Tricorythodes	1
Odonata	Gomphidae	Gomphus *	
		Ophiogomphus	1
Plecoptera	Leuctridae	Leuctra	7
	Perlidae	Acroneuria	1
		Paragnetina *	
		Phasganophora	13
	Pteronarcyidae	Pteronarcys *	
Trichoptera	Glossosomatidae	Glossosoma	1
	Hydropsychidae	Cheumatopsyche	4
		Hydropsyche *	
		Symphitopsyche	14
	Philopotamidae	Chimarra *	
		Dolophilodes	1
Decapoda	Cambaridae	Cambarus *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 39
1991: 21

RBP SCORE: 44
DIVERSITY INDEX: 3.78

TABLE B-11. Macroinvertebrate Data for Troups Creek at Austinburg, Pa.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus *	
		Stenelmis	3
	Gyrinidae	Dineutis*	
	Psephenidae	Psephenus	5
Diptera	Rhagionidae	Atherix	6
	Chironomidae		6
	Empididae	Hemerodromia	1
	Tipulidae	Hexatoma	1
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Pseudocloeon *	
	Caenidae	Caenis ..	8
	Heptageniidae	Heptagenia *	
		Stenacron *	
		Stenonema	6
	Oligoneuriidae	Isonychia	15
	Tricorythidae	Leptohyphes *	
		Tricorythodes *	
Megaloptera	Corydalidae	Nigronia	2
	Sialidae	Sialis *	
Odonata	Aeshnidae	Boyeria*	
	Coenagrionidae	Argia *	
	Gomphidae	Gomphus *	
		Hagenius *	
		Ophiogomphus	4
		Stylogomphus *	
Plecoptera	Leuctridae	Leuctra	1
	Perlidae	Neoperla	4
		Phasganophora	1
Trichoptera	Hydropsychidae	Cheumatopsyche	9
		Hydropsyche	14
		Potamyia *	
		Symphitopsyche	21
	Hydroptilidae	Stactobiella *	
	Philopotamidae	Dolophilodes	1
Limnophila	Physidae	Physa *	
Pelecypoda	Sphaeriidae	Pisidium	1

* Taxa not collected in 1991

NUMBER OF TAXA: 1988-91: 36
1991: 19

RBP SCORE: 42
DIVERSITY INDEX: 3.67

TABLE B-12. Macroinvertebrate Data for Cowanesque River at Lawrenceville, Pa.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Stenelmis *	
	Hydrophilidae	Berosus	3
Diptera	Rhagionidae	Atherix *	
	Chironomidae		9
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
Ephemeroptera	Baetidae	Pseudocloeon *	
	Caenidae	Caenis ..	6
	Heptageniidae	Heptagenia	8
		Stenonema	13
Megaloptera	Corydalidae	Corydalus *	
Odonata	Coenagrionidae	Argia ...	10
Trichoptera	Brachycentridae	Brachycentrus *	
	Glossosomatidae	Glossosoma	5
	Hydropsychidae	Cheumatopsyche	9
		Hydropsyche	10
		Symphitopsyche	8
	Hydroptilidae	Stactobiella *	
	Polycentropodidae	Nyctiophylax	6
		Polycentropus *	
Decapoda	Cambaridae	Orconectes	1
Isopoda	Asellidae	Asellus	8
Pelecypoda	Sphaeriidae *		
Tricladida	Planariidae	Dugesia	1

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 34
1991: 14

RBP SCORE: 34
DIVERSITY INDEX: 3.21

TABLE B-13. Macroinvertebrate Data for Tioga River at Lindley, N.Y.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Stenelmis	4
	Gyrinidae	Dineutis *	
	Hydrophilidae	Berosus	1
	Psephenidae	Psephenus *	
Diptera	Rhagionidae	Atherix	1
	Chironomidae		8
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
		Tipula *	
Ephemeroptera	Baetidae	Baetis	1
		Heterocloeon *	
		Pseudocloeon *	
	Ephemerellidae	Serratella	1
	Heptageniidae	Stenacron *	
		Stenonema	14
	Oligoneuriidae	Isonychia	17
	Siphlonuridae	Ameletus *	
	Tricorythidae	Tricorythodes *	
Megaloptera	Corydalidae	Corydalus *	
		Nigronia	4
Neuroptera	Sisyridae	Climacia *	
Odonata	Coenagrionidae	Argia *	
	Gomphidae	Gomphus *	
		Ophiogomphus *	
Plecoptera	Perlidae	Acroneuria *	
		Perlesta *	
	Perlodidae	Isoperla *	
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	14
		Hydropsyche *	
		Macronemum	2
		Symphitopsyche	26
	Hydroptilidae	Agraylea *	
		Dibusa *	
		Hydroptila *	
	Philopotamidae	Chimarra	3
	Polycentropodidae	Neureclipsis	6
		Nyctiophylax *	
Amphipoda	Gammaridae	Gammarus *	
Hemiptera	Gerridae	Gerris	1
Rhynchobdellida	Glossiphoniidae	Batrachobdella	1
Pelecypoda	Sphaeriidae	Pisidium *	
Isopoda	Asellidae	Asellus*	
Haplotaxida	Naididae *		

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 42
1991: 16

RBP SCORE: 30
DIVERSITY INDEX: 3.23

TABLE B-14. Macroinvertebrate Data for Seeley Creek at Seeley Creek, N.Y., 1986-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus *	
		Stenelmis	3
	Gyrinidae	Dineutis	1
		Gyrinus	1
	Psephenidae	Psephenus	1
Diptera	Rhagionidae	Atherix	2
	Chironomidae		10
	Empididae	Hemerodromia *	
	Tipulidae	Antocha *	
		Hexatoma *	
		Limonia *	
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Centroptilum *	
		Cloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Drunella *	
		Ephemerella *	
		Eurylophella *	
		Serratella *	
	Ephemeridae	Ephemera	1
	Heptageniidae	Epeorus *	
		Heptagenia *	
		Stenacron *	
		Stenonema	5
	Leptophlebiidae	Leptophlebia *	
		Paraleptophlebia *	
	Oligoneuriidae	Isonychia	17
	Siphlonuridae	Siphlonurus *	
	Tricorythidae	Leptohyphes *	
		Tricorythodes	17
Megaloptera	Corydalidae	Nigronia *	
	Sialidae	Sialis *	
Odonata	Gomphidae	Erpetogomphus *	
		Gomphus	1
		Ophiogomphus	2
		Stylogomphus *	
Plecoptera	Leuctridae	Leuctra	1
	Nemouridae	Amphinemura *	
	Perlidae	Acroneuria *	
		Phasganophora	1
	Perlodidae	Isoperla *	
Trichoptera	Brachycentridae	Brachycentrus *	
	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	5
		Hydropsyche *	
		Symphitopsyche	43

TABLE B-14. Macroinvertebrate Data for Seeley Creek at Seeley Creek, N.Y., 1986-91 (Continued)

Order	Family	Genus	Individuals Collected
	Hydroptilidae	Leucotrichia *	
		Stactobiella *	
	Philopotamidae	Chimarra *	
	Polycentropodidae	Neureclipsis *	
Limnophila	Physidae	Physa	1
	Planorbidae	Gyraulus *	
Lumbriculida	Lumbriculidae	Rhynchelmis *	

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 53
1991: 17

RBP SCORE: 24
DIVERSITY INDEX: 2.90

TABLE B-15. Macroinvertebrate Data for South Creek at Fassett, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Dubiraphia *	
		Optioservus *	
		Stenelmis	16
	Psephenidae	Psephenus	10
Diptera	Rhagionidae	Atherix *	
	Chironomidae		10
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tabanidae	Chrysops	2
	Tipulidae	Antocha *	
Ephemeroptera	Baetidae	Baetis *	
		Pseudocloeon *	
	Caenidae	Caenis *	
	Ephemeridae	Ephemera *	
	Heptageniidae	Epeorus *	
		Heptagenia *	
		Stenonema *	
	Leptophlebiidae	Leptophlebia *	
		Paraleptophlebia *	
	Oligoneuriidae	Isonychia	2
	Tricorythidae	Tricorythodes *	
Megaloptera	Corydalidae	Corydalus	2
		Chauliodes *	
	Sialidae	Sialis	12
Odonata	Gomphidae	Gomphus *	
		Ophiogomphus *	
Plecoptera	Perlidae	Acroneuria *	
		Neoperla *	
		Phasganophora	2
Trichoptera	Brachycentridae	Brachycentrus *	
	Hydropsychidae	Cheumatopsyche	24
		Hydropsyche	4
		Macronemum	6
		Symphitopsyche *	
	Hydroptilidae	Stactobiella *	
	Philopotamidae	Chimarra	2
	Polycentropodidae	Neureclipsis	2
		Nyctiophylax *	
Hydracarina *			
Collembola *			
Decapoda	Cambaridae	Orconectes	10
Hemiptera	Veliidae	Microvelia	2
Limnophila	Physidae	Physa	2
Pelecypoda	Sphaeriidae *		
Tricladida	Planariidae	Dugesia *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 45
1991: 16

RBP SCORE: 26
DIVERSITY INDEX: 3.12

TABLE B-16. Macroinvertebrate Data for Bentley Creek at Wellsburg, N.Y., 1986-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	2
		Stenelmis	2
	Hydrophilidae	Tropisternus *	
	Psephenidae	Psephenus	6
Diptera	Chironomidae		6
	Empididae	Hemerodromia	1
	Rhagionidae	Atherix	6
	Simuliidae	Simulium *	
	Tabanidae	Chrysops	1
	Tipulidae	Hexatoma	1
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Pseudocloeon *	
	Caenidae	Caenis	18
	Heptageniidae	Epeorus *	
		Heptagenia *	
		Stenacron *	
		Stenonema	26
	Leptophlebiidae	Leptophlebia *	
		Paraleptophlebia *	
	Oligoneuriidae	Isonychia	8
	Potamanthidae	Potamanthus	1
	Tricorythidae	Tricorythodes *	
Megaloptera	Corydalidae	Nigronia	1
	Sialidae	Sialis *	
Odonata	Gomphidae	Gomphus	1
		Ophiogomphus	11
		Stylogomphus *	
Plecoptera	Capniidae	Paracapnia *	
	Leuctridae	Leuctra *	
	Perlidae	Acroneuria *	
		Paragnetina *	
		Phasganophora	2
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche *	
		Hydropsyche	6
		Symphitopsyche	2
	Hydroptilidae	Stactobiella *	
	Leptoceridae	Mystacides *	
	Odontoceridae	Psilotreta	3
	Philopotamidae	Chimarra *	
	Polycentropodidae	Neureclipsis *	
Decapoda	Cambaridae	Cambarus *	
Limnophila	Physidae	Physa *	
	Planorbidae	Gyraulus *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 45
1991: 19

RBP SCORE: 36
DIVERSITY INDEX: 3.49

TABLE B-17. Macroinvertebrate Data for Chemung River at Chemung, N.Y.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Dubiraphia	14
		Optioservus *	
		Stenelmis *	
	Gyrinidae	Dineutis	1
	Hydrophilidae	Berosus	19
	Psephenidae	Ectopria *	
		Psephenus	1
	Ptilodactylidae	Anchytarsus *	
Diptera	Chironomidae		15
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
Ephemeroptera	Baetidae	Baetis	2
		Pseudocloeon *	
	Caenidae	Caenis ..	6
	Ephemerellidae	Serratella *	
	Ephemeridae	Ephemera *	
	Heptageniidae	Heptagenia *	
		Stenacron	5
		Stenonema *	
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia *	
	Polymitarcyidae	Ephoron*	
	Potamanthidae	Potamanthus	15
	Siphlonuridae	Parameletus *	
	Tricorythidae	Tricorythodes	2
Lepidoptera	Pyralidae	Petrophila *	
Megaloptera	Sialidae	Sialis	4
Odonata	Coenagrionidae	Argia ...	4
		Nehallenia	2
	Gomphidae	Gomphus *	
		Ophiogomphus *	
Plecoptera	Perlidae	Acroneuria *	
		Neoperla	1
	Perlodidae	Isoperla *	
Trichoptera	Helicopsychidae	Helicopsyche *	
	Hydropsychidae	Cheumatopsyche *	
		Hydropsyche *	
		Symphitopsyche	2
	Hydroptilidae	Dibusa *	
	Limnephilidae	Hydatophylax *	
		Pycnopsyche	1
	Polycentropodidae	Neureclipsis *	
		Nyctiophylax *	
Amphipoda	Talitridae	Hyalella *	
Hemiptera	Notonectidae	Notonecta	5
	Veliidae	Rhagovelia	2
Decapoda	Cambaridae	Cambarus *	
		Orconectes *	
Pelecypoda	Sphaeriidae	Musculium *	

TABLE B-17. Macroinvertebrate Data for Chemung River at Chemung, N.Y. (Continued)

Order	Family	Genus	Individuals Collected
Limnophila	Physidae	Physa ...	2
Rhynchobdellida	Glossiphoniidae	Batrachobdella *	
Tricladida	Planariidae	Dugesia*	

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 52
1991: 19

RBP SCORE: 30
DIVERSITY INDEX: 3.60

TABLE B-18. Macroinvertebrate Data for Susquehanna River at Sayre, Pa.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	1
		Stenelmis	8
	Gyrinidae	Dineutis*	
	Psephenidae	Ectopria*	
		Psephenus	10
Diptera	Rhagionidae	Atherix *	
	Chironomidae		5
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Limonia	1
Ephemeroptera	Baetidae	Baetis *	
		Pseudocloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella *	
		Serratella	28
	Heptageniidae	Heptagenia *	
		Rhithrogena *	
		Stenacron *	
		Stenonema	1
	Leptophlebiidae	Leptophlebia *	
	Oligoneuriidae	Isonychia	10
	Polymitarcyidae	Ephoron*	
	Potamanthidae	Potamanthus *	
	Tricorythidae	Tricorythodes *	
Lepidoptera	Pyralidae	Petrophila *	
Odonata	Coenagrionidae	Argia *	
	Gomphidae	Gomphus	1
Plecoptera	Leuctridae	Leuctra *	
	Perlidae	Neoperla*	
		Phasganophora	1
Trichoptera	Hydropsychidae	Cheumatopsyche	21
		Hydropsyche	6
		Macronemum	7
		Symphitopsyche	5
	Hydroptilidae	Ochrotrichia *	
	Philopotamidae	Chimarra	5
Amphipoda	Gammaridae	Gammarus *	
Annelida	Hirudinea *		
Decapoda	Cambaridae	Cambarus*	
		Orconectes *	
Pelecypoda	Sphaeriidae	Pisidium	1
Limnophila	Physidae	Physa *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1986-91: 42
1991: 16

RBP SCORE: 42
DIVERSITY INDEX: 3.26

TABLE B-19. Macroinvertebrate Data for South Branch Conewago Creek at Bandanna, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	15
		Stenelmis *	
	Psephenidae	Psephenus	1
Diptera	Chironomidae		3
	Dixidae	Dixa *	
	Rhagionidae	Atherix	2
	Tabanidae	Chrysops *	
	Tipulidae	Antocha *	
		Hexatoma	1
		Pedicia *	
		Tipula	2
Ephemeroptera	Baetidae	Baetis	4
		Centroptilum *	
	Ephemerellidae	Ephemerella *	
		Serratella	4
	Heptageniidae	Heptagenia *	
		Stenonema	10
	Leptophlebiidae	Paraleptophlebia *	
Megaloptera	Corydalidae	Nigronia	11
	Sialidae	Sialis *	
Odonata	Aeshnidae	Boyeria *	
	Coenagrionidae	Argia *	
	Gomphidae	Gomphus	7
		Hagenius	2
		Stylogomphus *	
Plecoptera	Leuctridae	Leuctra	1
	Peltoperlidae	Peltoperla	2
	Perlidae	Acroneuria	19
		Phasganophora *	
	Perlodidae	Isoperla *	
Trichoptera	Glossosomatidae	Glossosoma	4
	Hydropsychidae	Cheumatopsyche	2
		Hydropsyche	4
		Symphitopsyche	6
	Limnophilidae	Neophylax	1
	Philopotamidae	Chimarra *	
		Dolophilodes	3
Hemiptera	Veliidae	Rhagovelia	2
Hydracarina *			
Decapoda	Cambaridae	Procambarus *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 41
1991: 22

RBP SCORE: 48
DIVERSITY INDEX: 3.90

TABLE B-20. Macroinvertebrate Data for Long Arm Creek at Bandanna, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Macronychus *	
		Optioservus	14
		Stenelmis	10
	Psephenidae	Psephenus	2
Diptera	Rhagionidae	Atherix	3
	Chironomidae		9
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
		Hexatoma	4
		Tipula *	
Ephemeroptera	Baetidae	Baetis	2
		Heterocloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Serratella	16
	Ephemeridae	Ephemera *	
	Heptageniidae	Epeorus *	
		Heptagenia *	
		Stenacron *	
		Stenonema	4
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia *	
Megaloptera	Corydalidae	Nigronia *	
	Sialidae	Sialis *	
Plecoptera	Leuctridae	Leuctra *	
	Perlidae	Phasganophora *	
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche *	
		Hydropsyche	41
		Symphitopsyche	15
Decapoda	Cambaridae	Cambarus *	
		Orconectes *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 31
1991: 11

RBP SCORE: 18
DIVERSITY INDEX: 2.40

TABLE B-21. Macroinvertebrate Data for Susquehanna River at Marietta, Pa.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Dubiraphia *	
		Optioservus *	
		Stenelmis	6
	Psephenidae	Psephenus	1
Diptera	Chironomidae		9
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
Ephemeroptera	Baetidae	Baetis *	
		Centroptilum *	
		Pseudocloeon	2
	Caenidae	Caenis *	
	Ephemerellidae	Serratella *	
	Heptageniidae	Heptagenia *	
		Leucrocuta *	
		Stenacron *	
		Stenonema	6
	Oligoneuriidae	Isonychia	14
	Polymitarcyidae	Ephoron *	
	Potamanthidae	Potamanthus	10
	Siphlonuridae	Ameletus *	
	Tricorythidae	Leptohyphes *	
		Tricorythodes	1
Lepidoptera	Pyralidae	Petrophila *	
Megaloptera	Corydalidae	Nigronia	3
	Sialidae	Sialis	1
Odonata	Coenagrionidae	Argia	2
Trichoptera	Hydropsychidae	Cheumatopsyche	1
		Hydropsyche	3
		Macronemum	33
		Symphitopsyche *	
	Hydroptilidae	Leucotrichia *	
		Stactobiella *	
	Philopotamidae	Chimarra	8
	Polycentropodidae	Nyctiophylax *	
Amphipoda	Gammaridae	Gammarus *	
Decapoda	Cambaridae	Cambarus *	
		Orconectes	2
		Procambarus *	
Pelecypoda	Sphaeriidae	Musculium *	
		Pisidium *	
Lumbriculida	Lumbriculidae	Rhynchelmis *	
Tricladida	Planariidae	Dugesia *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1986-91: 43
1991: 16

RBP SCORE: 36
DIVERSITY INDEX: 3.22

TABLE B-22. Macroinvertebrate Data for Scott Creek at Delta, Pa.

Order	Family	Genus	Individuals Collected
Coleoptera	Dytiscidae	Agabus	3
Diptera	Chironomidae		32
	Empididae	Hemerodromia *	
	Simuliidae	Simulium*	
	Tabanidae	Chrysops*	
	Tipulidae	Antocha*	
		Pedicia *	
		Tipula	23
Ephemeroptera	Baetidae	Baetis *	
Odonata	Aeshnidae	Boyeria	2
	Gomphidae	Gomphus*	
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	6
		Hydropsyche	3
		Symphitopsyche *	
Decapoda	Cambaridae	Cambarus*	
Isopoda	Asellidae	Asellus *	
Limnophila	Physidae	Physa ...	20
Haplotaxida	Naididae	Nais	13

* Taxa not collected in 1991
NUMBER OF TAXA: 1989-91: 19
1991: 8

RBP SCORE: 8
DIVERSITY INDEX: 2.50

TABLE B-23. Macroinvertebrate Data for Conowingo Creek at Pleasant Grove, Pa.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Macronychus *	
		Ordobrevia *	
		Optioservus *	
		Stenelmis	16
	Hydrophilidae	Berosus *	
	Psephenidae	Psephenus *	
Diptera	Rhagionidae	Atherix*	
	Chironomidae		7
	Empididae	Hemerodromia *	
	Simuliidae	Simulium*	
	Tipulidae	Antocha *	
		Tipula *	
Ephemeroptera	Baetidae	Baetis ..	7
	Caenidae	Caenis *	
	Ephemerellidae	Serratella	1
	Heptageniidae	Heptagenia	2
		Stenacron *	
		Stenonema	6
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia	30
	Siphlonuridae	Ameletus *	
Megaloptera	Corydalidae	Corydalus	9
		Chauliodes *	
		Nigronia *	
	Sialidae	Sialis *	
Odonata	Coenagrionidae	Argia	2
Plecoptera	Leuctridae	Leuctra *	
Trichoptera	Brachycentridae	Micrasema *	
	Hydropsychidae	Cheumatopsyche	5
		Hydropsyche	4
		Symphitopsyche	9
	Hydroptilidae	Leucotrichia *	
	Philopotamidae	Chimarra	2
Hydracarina *			
Decapoda	Cambaridae	Cambarus*	
		Orconectes	1
Isopoda	Asellidae	Asellus *	
Lumbriculida	Lumbriculidae	Rhynchelmis *	

* Taxa not collected in 1991
NUMBER OF TAXA: 1986-91: 38
1991: 14

RBP SCORE: 24
DIVERSITY INDEX: 3.21

TABLE B-24. Macroinvertebrate Data for Octoraro Creek at Rising Sun, Md.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus *	
		Stenelmis	2
	Psephenidae	Psephenus	2
Diptera	Chironomidae		8
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Antocha*	
Ephemeroptera	Baetidae	Baetis *	
		Neocloeon *	
		Pseudocloeon	2
	Ephemerellidae	Ephemerella *	
		Serratella *	
	Heptageniidae	Heptagenia *	
		Stenacron	2
		Stenonema	12
	Oligoneuriidae	Isonychia *	
	Siphlonuridae	Siphlonurus *	
	Tricorythidae	Leptohyphes *	
		Tricorythodes *	
Megaloptera	Corydalidae	Corydalus	1
	Sialidae	Sialis *	
Odonata	Coenagrionidae	Argia	2
Plecoptera	Perlidae	Acroneuria *	
Trichoptera	Brachycentridae	Brachycentrus *	
		Micrasema *	
	Hydropsychidae	Cheumatopsyche	9
		Hydropsyche *	
		Macronemum	3
		Symphitopsyche *	
	Hydroptilidae	Leucotrichia *	
		Stactobiella *	
	Lepidostomatidae	Lepidostoma	1
	Philopotamidae	Chimarra	13
Amphipoda	Gammaridae	Gammarus	14
Cladocera	Leptodoridae	Leptodora *	
Decapoda	Cambaridae	Orconectes	1
Pelecypoda	Corbiculidae	Corbicula	6
	Sphaeriidae	Pisidium*	
Haplotaxida	Naididae	Nais	2
Tricladida	Planariidae	Dugesia *	

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 40
1991: 16

RBP SCORE: 30

DIVERSITY INDEX: 3.46

TABLE B-25. Macroinvertebrate Data for Ebaughs Creek at Stewartstown, Pa.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	13
		Stenelmis *	
	Psephenidae	Psephenus	6
Diptera	Rhagionidae	Atherix *	
	Chironomidae		8
	Empididae	Hemerodromia	1
	Simuliidae	Simulium *	
	Tipulidae	Antocha*	
		Tipula	1
Ephemeroptera	Baetidae	Baetis *	
		Centroptilum *	
		Pseudocloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Drunella *	
		Eurylophella *	
		Serratella *	
	Ephemeridae	Ephemera *	
	Heptageniidae	Epeorus *	
		Heptagenia *	
		Stenonema	5
	Leptophlebiidae	Leptophlebia *	
		Paraleptophlebia *	
	Oligoneuriidae	Isonychia	3
	Polymitarcyidae	Ephoron *	
	Potamanthidae	Potamanthus *	
	Tricorythidae	Leptohyphes	1
Megaloptera	Corydalidae	Nigronia	2
Odonata	Aeshnidae	Boyeria *	
	Gomphidae	Gomphus	3
		Ophiogomphus	1
Plecoptera	Leuctridae	Leuctra*	
	Perlidae	Acroneuria *	
		Phasganophora *	
Trichoptera	Glossosomatidae	Glossosoma	6
	Hydropsychidae	Cheumatopsyche *	
		Hydropsyche	6
		Symphitopsyche	27
	Hydroptilidae	Dibusa *	
		Leucotrichia *	
	Philopotamidae	Chimarra *	
	Polycentropodidae	Nyctiophylax *	
Decapoda	Cambaridae	Cambarus	1
Lumbriculida	Lumbriculidae	Rhynchelmis	1
Tricladida	Planariidae	Dugesia *	

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 45
1991: 16

RBP SCORE: 26
DIVERSITY INDEX: 3.23

TABLE B-26. Macroinvertebrate Data for Deer Creek at Gorsuch Mills, Md.

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Macronychus *	
		Optioservus	6
		Stenelmis	3
	Gyrinidae	Dineutis *	
	Psephenidae	Psephenus	1
	Ptilodactylidae	Anchytarsus *	
Diptera	Rhagionidae	Atherix *	
	Chironomidae		8
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
		Tipula *	
Ephemeroptera	Baetidae	Baetis *	
		Centroptilum *	
		Neocloeon *	
		Pseudocloeon *	
	Caenidae	Caenis *	
	Ephemerellidae	Ephemerella *	
		Serratella	5
		Eurylophella *	
	Heptageniidae	Epeorus *	
		Heptagenia *	
		Ironodes *	
		Stenonema	16
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia	25
	Siphlonuridae	Parameletus *	
	Tricorythidae	Tricorythodes *	
Lepidoptera	Pyralidae	Petrophila *	
Megaloptera	Corydalidae	Corydalus	
		Nigronia	5
	Sialidae	Sialis *	
Odonata	Gomphidae	Gomphus	1
		Hagenius	1
Plecoptera	Leuctridae	Leuctra *	
	Perlidae	Acroneuria	1
		Paragnetina *	
		Phasganophora *	
	Perlodidae	Isoperla *	
	Taeniopterygidae	Strophopteryx *	
Trichoptera	Brachycentridae	Brachycentrus *	
	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	9
		Hydropsyche	3
		Symphitopsyche	17
	Hydroptilidae	Dibusa *	
		Leucotrichia *	
		Stactobiella *	
	Philopotamidae	Chimarra *	

TABLE B-26. Macroinvertebrate Data for Deer Creek at Gorsuch Mills, Md. (Continued)

Order	Family	Genus	Individuals Collected
Hydracarina *			
Decapoda	Cambaridae	Cambarus	1
Lumbriculida	Lumbriculidae	Rhynchelmis	1

* Taxa not collected in 1991

NUMBER OF TAXA: 1986-91: 52
1991: 16

RBP SCORE: 24
DIVERSITY INDEX: 3.31

TABLE B-27. Macroinvertebrate Data for Big Branch Deer Creek at Fawn Grove, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	8
		Stenelmis *	
	Psephenidae	Ectopria *	
		Psephenus *	
	Ptilodactylidae	Anchytarsus *	
Diptera	Chironomidae		9
	Empididae	Hemerodromia *	
	Simuliidae	Simulium *	
	Tipulidae	Antocha *	
		Tipula	2
Ephemeroptera	Baetidae	Baetis	2
		Cloeon *	
		Heterocloeon *	
		Pseudocloeon *	
	Ephemerellidae	Serratella *	
	Heptageniidae	Epeorus	8
		Heptagenia *	
		Stenonema	12
	Oligoneuriidae	Isonychia	3
Megaloptera	Corydalidae	Chauliodes	15
		Nigronia *	
	Sialidae	Sialis *	
Odonata	Calopterygidae	Hetaerina *	
	Gomphidae	Gomphus *	
		Hagenius *	
Plecoptera	Leuctridae	Leuctra	15
	Perlodidae	Isoperla *	
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche *	
		Hydropsyche	4
		Symphitopsyche	8
	Philopotamidae	Chimarra *	
		Dolophilodes	3
	Rhyacophilidae	Rhyacophila	1
Decapoda	Cambaridae	Cambarus *	
Hemiptera	Gerridae	Gerris	1
Tricladida	Planariidae	Dugesia	1

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 37
1991: 15

RBP SCORE: 34
DIVERSITY INDEX: 3.46

TABLE B-28. Macroinvertebrate Data for Falling Branch Deer Creek at Fawn Grove, Pa., 1988-91

Order	Family	Genus	Individuals Collected
Coleoptera	Elmidae	Optioservus	17
		Stenelmis	7
	Hydrophilidae	Tropisternus	1
Diptera	Chironomidae		15
	Empididae	Hemerodromia	1
	Simuliidae	Simulium *	
	Tipulidae	Antocha	11
		Tipula	1
Ephemeroptera	Baetidae	Baetis	8
		Centroptilum *	
		Heterocloeon *	
		Pseudocloeon *	
	Ephemerellidae	Serratella	2
	Heptageniidae	Epeorus *	
		Stenonema	2
	Leptophlebiidae	Paraleptophlebia *	
	Oligoneuriidae	Isonychia	1
Megaloptera	Corydalidae	Chauliodes *	
		Nigronia	1
Odonata	Aeshnidae	Boyeria *	
	Gomphidae	Gomphus *	
Plecoptera	Leuctridae	Leuctra	4
Trichoptera	Glossosomatidae	Glossosoma *	
	Hydropsychidae	Cheumatopsyche	3
		Hydropsyche	4
		Symphitopsyche	2
	Limnophilidae	Goera	1
		Neophylax	3
	Philopotamidae	Chimarra	1
	Polycentropodidae	Neureclipsis	1
	Rhyacophilidae	Rhyacophila *	
Haplotaxida	Naididae *		

* Taxa not collected in 1991
NUMBER OF TAXA: 1988-91: 32
1991: 20

RBP SCORE: 32
DIVERSITY INDEX: 3.48